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# Promoting Food Safety in Indonesia's Online Food Delivery Services

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**Promoting Food Safety in Indonesia's  
Online Food Delivery Services**

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## EXECUTIVE SUMMARY

Indonesia's online food delivery sector is expected to grow by 11.5% annually from 2020 to 2024. Food sales represented 27.85% of all e-commerce sales in 2018, making it the largest category in e-commerce.

Online food delivery expands choice and convenience for consumers. It also provides employment and economic opportunities for sellers and deliverers. However, the disconnect between consumers and sellers as a result of third-party delivery services creates unique food safety challenges.

Responsibility for food safety standards, pre-market certification, and post-market supervision lie with the National Agency of Drug and Food Control (NA-DFC), the Ministry of Health, and city/district governments. A complicated registration process keeps smaller enterprises from formalizing their businesses before entering the market, while the lack of capacity and coordination among government institutions hinders effective post-market supervision. This carries real consequences—half of the unregistered food in Indonesia was found to be unsafe for consumption.

To strengthen the food safety system for online food delivery, city and district governments should reduce barriers to market entry for household enterprises. The pre-market certification process needs to be simple, educate merchants about food safety standards, and facilitate the monitoring and tracing of food safety issues.

Co-regulation with the private sector needs to be incorporated in the regulatory framework for food safety. Co-regulation addresses difficulties of the public enforcement of food safety and complements public enforcement with private sector initiatives. This reality should be acknowledged in the current deliberations of the Food and Drug Supervision Bill.

Finally, processed food deliveries should be temporarily exempt from local governments' plastic reduction policies while policies are re-evaluated and regulations should consider the unique needs of the food businesses and the various types and characteristics of plastic bags. Biodegradable plastics should remain an option for food businesses. The government should incentivize innovations on durable and sustainable alternatives to plastic.

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## INDONESIA'S CHANGING FOOD CONSUMPTION PATTERNS

Modern food science and technology have brought significant changes in food processing systems. Packaged, branded, and ready to eat, to drink, or to heat 'fast' or 'convenient' products are becoming increasingly popular with consumers. The NOVA<sup>1</sup> food classification system, widely used in scientific literature and by the Food and Agriculture Organization of the United Nations, classifies all food into four groups (Monteiro et al., 2019):

- Group 1: Unprocessed and minimally processed foods, including fresh foods and raw materials, such as fruits, vegetables, eggs, fresh milk, and grains;
- Group 2: Processed ingredients that went through processes such as pressing, refining, grinding, milling, and drying, including oils, butter, sugar, and salt;
- Group 3: Processed foods that went through various preservation or cooking methods, such as hot meals, salted or sugared nuts and seeds, and unpackaged breads. Any meals that are prepared by adding ingredients from group 2 and group 1 are considered processed;
- Group 4: Ultra-processed foods made by industrial processes, many requiring sophisticated equipment and technology, such as packaged snacks, carbonated soft drinks, pre-prepared ready-to-heat meals, mass produced packaged breads and buns, instant noodles, and many more.

The food and beverage industry's contribution to Indonesian GDP grew from 5.32% in 2014 to 6.45% in 2019, supported by growth in processed and ultra-processed food consumption (Statistics Indonesia, 2020; Tenggara Strategics & Centre for Strategic and International Studies, 2019). Sales of ultra-processed packaged foods in modern retail grew by more than 40% between 1998 and 2010. This trend is likely to continue with an expected increase in consumer preference for time-saving convenience (Dyck, Woolverton & Rangkuti, 2012).

Between 2017 and 2019, consumption of processed or ultra-processed foods increased by 9.63% (MOA, 2019). An estimated 30% of monthly food expenditures and 21% of calorie intake come from 'prepared food and beverages,' including store-bought processed foods and meals from catering services (Vermeulen et al, 2019). This finding is consistent with another study in Jakarta that found that while unprocessed foods still dominate consumption (57.20%), processed and ultra-processed foods account for 21.20% (Setyowati et al., 2018).

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<sup>1</sup> NOVA is a name, not an acronym.

“Internet connectivity and the adoption of digital technologies have facilitated the emergence of online food ordering and delivery.”

How consumers purchase food is also changing. Internet connectivity and the adoption of digital technologies have facilitated the emergence of online food ordering and delivery through marketplace apps (platforms that sell items including food, such as Tokopedia, Bukalapak, Shopee), food aggregator apps (platforms that offer access to multiple restaurants and handle delivery logistics, such as GoFood and GrabFood), restaurant-to-consumer delivery (platforms by individual restaurants, such as Pizza Hut Delivery), social media (Instagram and Facebook), and messaging apps (WhatsApp). These platforms are collectively referred to as third parties in online food delivery.

Throughout Southeast Asia, Gross Merchandise Value (GMV) of online food delivery has surged, increasing by almost 15 times between 2015 and 2019 to a value of around USD 6 billion. Its value is predicted to pass USD 20 billion by 2025 (Google et al., 2019). GoFood claims to process USD 2 billion in annualized Gross Transaction Value, making it the largest food delivery service in Southeast Asia in 2019 (Gojek, 2020a; Vermeulen et al, 2019; Interview 12).

In Indonesia, online food delivery is expected to grow by 11.5% annually from 2020–2024 (Statista, 2020). Food (unprocessed, processed ingredients, processed, and ultra-processed foods) contributed 27.85% of all e-commerce sales in 2018, the largest proportion of any category in e-commerce (Statistics Indonesia, 2019). A Nielsen survey of the six most populated urban areas in Indonesia (Greater Jakarta (Jabodetabek), Semarang, Surabaya, Makassar, Bandung, and Medan) found that 41% of respondents have ordered food delivery, and of those who did, 85% ordered through GoFood, GrabFood, or similar applications (Nielsen Company, 2019).

Promotion codes and marketing campaigns further encourage the use of food delivery services (Google et al., 2019). Grab Indonesia reported an increase in GrabFood transactions by 4% in single order and 7% in basket size between October 2019 and March 2020 (Grab Indonesia, 2020a). More recently, the Covid-19 pandemic created a further push towards online food delivery. As restaurants and cafés were closed for dine-in patrons, takeaway ordered through e-commerce platforms (or other channels) have increased. McKinsey (2020a) reported that 34% of their surveyed consumers ordered more online food deliveries during the crisis.

Online food delivery creates opportunities for many Indonesians. It expands choice and convenience by expanding the meal options available to consumers to include restaurants, household food sellers, food courts, and street stalls (Hirschberg et al., 2016; Google et al., 2019; Interview 4 & 10).

Online food delivery also provides employment and entrepreneurship opportunities for sellers and drivers. For example, GoFood’s small and medium-sized enterprise (SME) merchants contributed an estimated IDR 18 trillion (USD 1.26 billion)<sup>2</sup> to the Indonesian economy in 2018, and 93% of merchants reported an increase in transaction volume (LD FEB UI, 2019). Another 2018 study of the food aggregator app GrabFood found that its food merchants contributed IDR 20.8 trillion (USD 1.46 billion) to the Indonesian economy, and that 82% of micro and small-sized

<sup>2</sup> This paper uses the exchange rate USD 1 = IDR 14,247.68, the average rate between January 2018 and March 2020.

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GrabFood merchants were in the informal sector and did not have a business license (Tenggara Strategics & Center for Strategic and International Studies, 2019). Digital platforms and their large fleets of drivers have helped micro and small food kiosks to provide on-demand delivery services that were previously available to very few fast-food restaurants.

On the other hand, online food delivery creates food safety challenges (Mahmoud, 2019; Food and Drug Administration, 2020; Interview 1, 2, 3, 4 & 10). Food safety refers to food handling, preparation, and storage conditions and practices from producers to consumers that aim to prevent contamination and foodborne illnesses (Australian Institute of Food Safety, 2020; FAO, 2019; USDA, 2019; Interview 4 & 10). Foodborne illnesses are caused by bacteria, viruses, parasites, or chemical substances entering the body through contaminated food or water. Foodborne illnesses can lead to loss of income, increased health care costs, and legal costs (WHO, 2020; FAO, 2017; Interview 4). Repeated episodes of foodborne illnesses can cause severe malnutrition and loss of life, especially among infants and young children (FAO, 2017).

In general, food safety is considered poor in Indonesia (Interview 3, 4 & 7). The Global Food Security Index 2019 (EIU, n.d.) ranked Indonesia's food quality and safety 84<sup>th</sup> out of 13 countries, behind nearby economies such as Thailand, Vietnam, Myanmar, and the Philippines.

Foodborne illnesses in Indonesia remain underreported, but some statistics may help to illustrate the extent of the problem (Agustina, 2015; Interview 4 & 7). From 2000 to 2015, Indonesia recorded 61,119 cases of foodborne illness outbreaks, resulting in 219 reported deaths. An "outbreak" refers to two or more patients suffering from a similar foodborne disease caused by ingesting a common food (Arisanti et al., 2018). Another proxy is reported cases of diarrhea, which although it has other causes (poor sanitation, other illnesses) is a common symptom of foodborne illnesses (Interview 7). The Ministry of Health's Basic Health Research (*Riset Kesehatan Dasar* or *Riskesdas*) reported more than 1 million cases of diarrhea across Indonesia in 2018 (Ministry of Health, 2018).

In Indonesia, food safety of processed and ultra-processed food is under the authority of two main regulators, the National Agency of Drug and Food Control (NA-DFC), which requires ultra-processed food items to be registered and to have distribution permits, and local governments, which issue permits for serving hot meals and for operating in the household food industry. However, many food items are sold without the proper registration and distribution permits (Interview 2, 3, 4 & 10).

In a study of one e-commerce platform in Indonesia, Ernawanti et al. (2018) reported that about 35% of processed packaged food sold were sold without a permit or the required food labels. In one case in 2018, investigators (*Penyidik Pegawai Negeri Sipil* or PPNS) of the NA-DFC found 14,553 pieces of unregistered ultra-processed food worth IDR 7.21 billion (USD 506,047) meant to be sold without permit through online commerce platforms (NA-DFC, 2019b).

Without NA-DFC supervision, food sales are more likely to pose food safety risks (Interview 2, 3, 4 & 10). In 2018, NA-DFC (2019a) examined a total of 23,463 registered and unregistered food samples and found that 14% of all samples and half of the unregistered food samples were unsafe for consumption. These food items contained hazardous substances misused as food additives such as formalin, borax, Rhodamin B, and acid yellow (Metanil Yellow), or showed

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microbial contamination. Prohibited additives are used for food durability and coloring, while contamination occurs as a result of insufficient hygienic practices and food sanitation requirements (FAO 2017; Chrislia, 2017; Interview 1).

In addition to these general food safety concerns, online food deliveries carry additional food safety challenges due to the separation of producer and consumer through added players in the transaction (Mahmoud, 2019; Food and Drugs Administration, 2020; Godwin et al., 2014; Food and Drug Administration, 2019; Interview 1, 2, 3, 4 & 10).

The massive proliferation of the food sector in the digital economy requires strategic policies crafted with input from relevant stakeholders. Without effectively enforced food safety and control systems, the availability of unsafe food products sold through digital platforms and unsafe food handling during preparation and delivery creates risks for consumers (Interview 3 & 4). Although many online food delivery services offer unprocessed and processed ingredients (NOVA groups 1 and 2), this paper will focus on the online sale of processed and ultra-processed foods (NOVA groups 3 and 4).



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## FOOD SAFETY ISSUES IN ONLINE FOOD DELIVERY

Food safety requires the care and attention of everyone involved in handling the food from farm to fork. This includes any persons preparing, cooking, and handling the food during processing, any person who handles the food before it leaves the merchant, the delivery person, and the end consumer.

In Indonesia, the characteristics of merchants in the online food delivery sector are representative of the broader food industry. The overwhelming majority of businesses in the food industry are part of the 93.7% share of micro-enterprises with fewer than four employees. There are an estimated 1.5 million enterprises employing more than 2.9 million people, including street vendors (commonly known as *warung*) and household enterprises. Small enterprises with five to 19 employees make up 6% of the food industry. While medium-sized (20–99 employees) and large enterprises (more than 100 employees) are only less than 0.3% of the businesses in the food industry, they employ 16% of the total workforce—more than 700,000 employees—in the food and beverage industry (EU-Indonesia Business Network, 2017). Many street food vendors and household enterprises sell through food aggregator apps or through social media and messaging apps. Among GoFood’s 50,000 merchants in Indonesia, most are considered micro, small, and medium-sized enterprises (LD FEB UI, 2019; Interview 12).

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While the online food delivery sector mirrors the broader food industry, customers of online food delivery services are distinct from general Indonesian consumers. In general, food consumers in Indonesia have little purchasing power (Putri, 2018; BPKN, 2016) and low- to middle-income Indonesians put a higher priority on the price of food than on food quality (Putri, 2018; Puspitasari, 2010; Nababan, 2015). Online food delivery customers are younger and have different preferences: 45.1% are 25–34 years old, most are students or employees (Statista, 2020; Suhartanto, et al., 2019). For them, price is less of a priority than the performance of the online system (including the availability and reliability of apps and tracking features), the quality of food delivered (such as taste, healthiness, freshness, and presentation), and the value offered by the service provider (such as efficiency and privacy) (Suhartanto, et al., 2019; Ilham, 2018). Online customers are willing to tolerate price increases or higher costs than conventional buyers because of the benefits offered by online food delivery (Suhartanto et al., 2019; Prabowo & Nugroho, 2019).

Between the orders from merchants and delivery to consumers, foods are handled either by drivers (often referred as partners) of the food aggregator apps or third-party delivery services. In Indonesia, delivery people commonly utilize motorbikes for delivery, carrying the foods in plastic or paper bags hung on the front of the motorbike. More recently, some delivery person have started carrying reusable bags. Gojek has more than two million GoRide (motorbike) and GoCar driver-partners across Indonesia as of June 2020 (Gojek, n.d.; Interview 12).

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Merchants, delivery persons, and consumers all share responsibility for preventing food contamination by following best practices of food safety procedures. The World Health Organization (WHO) (2020) recommends five key steps to ensure food safety:

1. Keep clean through handwashing before and during food preparation and handling, sanitizing all surfaces and equipment for food preparation, and protecting cooking areas and food from insects, pests, and other animals.
2. Separate raw meat, poultry, and seafood from other foods and use separate equipment and utensils to handle raw food to prevent cross-contamination.
3. Cook food and reheat cooked food thoroughly.
4. Keep food at safe temperatures by refrigerating all cooked and perishable items or keeping cooked food piping hot before serving. The WHO recommends not leaving cooked food at room temperature for more than two hours.
5. Use safe water and raw materials and do not use food after its expiry date.

While these steps are applicable to both offline and online food transactions, there are several additional considerations in online food delivery. Food safety risks occur during food production and sales, food delivery, and food consumption.

### A. Food Production and Sales

Food safety during food production falls under the responsibility of merchants. However, many merchants offering food delivery are informal micro-enterprises such as street vendors and household enterprises. They tend to lack knowledge and apply poor food handling practices (Putri, 2018; Hariyadi & Dewanti-Hariyadi, 2006; Thio & Wijaya, 2010; Interview 4 & 10). Street vendors may not even have access to proper facilities and infrastructure such as basic sanitation, clean water, cold storage, or electricity (Hariyadi & Dewanti-Hariyadi, 2006; Hariyadi, 2016; EIBN, 2017; Interview 4).

Unfortunately, online food delivery makes it hard for consumers to avoid food safety risks (Interview 1, 2 & 4). Customers lack the information needed to accurately assess food safety risks because the information is not provided on the platform and they cannot inspect the food preparation directly (Ariyanti & Hadita, 2017; Putri, 2018; Puspitasari, 2010; Interview 2). Unlike a consumer who picks up food themselves or dines in a restaurant, consumers who order online are unable to physically see the place where the food is being prepared.

The Covid-19 pandemic has created additional concerns. Although 70% of consumers reported that they care more about food safety during the pandemic (McKinsey, 2020b) they cannot inspect whether food merchants follow recommended health protocols. While the WHO (2020) considers it highly unlikely that people can contract Covid-19 from food or food packaging, they offer several recommendations for food workers to reduce the risk, such as sanitizing work surfaces more often and wearing masks. Online consumers cannot check whether these recommendations are followed.

Another area of concern is proper food labelling. Food labelling is defined by NA-DFC<sup>3</sup> as descriptions of food in the form of images, text, a combination of both, or other forms that are included in the food, incorporated into, attached to, or form part of food packaging. Labelling<sup>4</sup> provides the necessary information to consumers, such as expiration date, nutritional information, storage information, government's identification permit, and a production address that supports traceability (Thahara, 2013; Interview 2 & 4). Online customers can only inspect the label once the food arrives, unlike those who purchase it from a physical store. The Indonesian Consumer Foundation (*Yayasan Lembaga Konsumen Indonesia* or YLKI) received several customer complaints regarding expired food purchased online (Interview 3).

## B. Food Delivery

Food delivery may be the most significant aspect of online food delivery that makes it different from traditional, offline food transactions. Food safety during delivery depends on the delivery person and is determined by the outside temperature, the weather, delivery time, and proper food packaging and storage (Hirschberg et al., 2016; Godwin et al., 2014; Orjuela-Castro, et al., 2019; New Markets Lab, 2019; Mahmoud, 2019; Interview 1 & 4).

Concerns about food safety in food delivery include inappropriate handling, during which foods are treated no differently than non-perishable products after leaving the merchant or restaurant. For example, a lack of cold chain and proper storage can result in the development of pathogens such as *E. coli*, which cause diarrhea, often bloody, with acute abdominal cramps for three to seven days after infection (Godwin et al., 2014; Cassin, et al., 1998; Interview 4). The WHO (2020) recommends that cooked food not be left at room temperature for more than two hours. In order to follow these guidelines, the delivery person must immediately deliver the food, especially in the case of hot meals. In addition, they must pay extra attention to keeping food clean, especially from insects or pests, during the delivery trip (Interview 4 & 10). This is done by using extra packaging to protect the food, such as plastic or paper bags provided by the merchants. As part of an environmental initiative to reduce plastics while ensuring food safety, ride hailing companies have been gradually giving out reusable insulated thermal bags for food to their driver partners especially in big cities such as Jakarta, Bandung, Semarang, and Denpasar (Gojek, 2019; Grab Indonesia, 2019; Interview 12).

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During the Covid-19 pandemic, food delivery procedures include additional health protocols. The SARS-CoV-2 virus can be picked up from drivers who get infected via contaminated frequent-touch surfaces, such as steering wheels, door handles, and mobile devices. Food aggregator apps, NA-DFC, and others have responded by issuing additional guidelines for food delivery

<sup>3</sup> Definition as stipulated in Government Regulation No. 69/1999 on Food Labelling and Advertisements. It requires that labels contain at least the name of the food, ingredient list, net weight/volume, name and address of manufacturer or importer, halal for those required, production date and code, expiration date, registration number and code, and origins.

<sup>4</sup> Labelling for food products is governed by the Food Law No. 18/2012 and Government Regulation No. 86/2019 on Food Safety. Sanctions regarding food labelling include fines, temporary prohibition on sales, redress and compensation, and revocation of permit. According to the Food Law, intentionally false information and misleading advertisements can be punished with up to three years in jail or a maximum fine of IDR 6 billion.

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during the Covid-19 pandemic (FDA 2020; WHO 2020; Gojek 2020a; NA-DFC, 2020a). The guidelines recommend more frequent hand washing or hand sanitizing, wearing masks, checking body temperature, using food safety seals, sterilizing the restaurant area frequently, providing hand washing facilities for staff and drivers, and maintaining a safe distance with delivery persons. GoFood and GrabFood have provided masks and hand sanitizers for delivery persons and introduced contactless delivery to reduce contact between merchants, drivers, and consumers (Grab Indonesia 2020a; Gojek 2020a; Interview 12).

### C. Food Consumption

The last link in the online food delivery chain is the consumer. Since food that has been ordered online is not consumed immediately after preparation at a kiosk or a restaurant, consumers must ensure the safety of the food after they have received it. Food safety after delivery is ensured through proper hygiene, maintaining the proper temperature, or reheating the food thoroughly to more than 60°C prior to serving (WHO, 2020; Interview 4 & 10).

Unfortunately, many consumers still have poor food safety awareness (Ariyanti & Hadita, 2017; Interview 4). Only 72% of consumers always clean the table and 73% wash their hands before consuming the products they've ordered (Nababan, 2015). In addition, many consumers fail to follow the storage and reheating instructions attached to the product. A study of infant formula milk powder preparation found that out of 93% and 97% of respondents knew about storage and preparation instructions respectively, but 17% did not always follow storage instructions and 33% did not always follow preparation instructions (Nababan, 2015). Another study of consumers who made online food purchases found that 54% of online consumers always read food labels while 41% only sometimes read the labels (Ernawanti et al., 2018). Consumers may not follow food safety standards because of low awareness, particularly awareness of the importance of good hygiene, personal cleanliness, and handwashing (Hariyadi & Dewanti-Hariyadi 2006; Fardiaz, 2008; Interview 4). The national health survey (Riskesmas) in 2018 reported that only half of the Indonesian population above 10 years old followed proper handwashing practices (Ministry of Health, 2018).

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## REGULATORY AND INSTITUTIONAL CHALLENGES TO ENSURE SAFE FOOD

### A. Regulations on Food Production and Sales

The main legal foundation for food safety in Indonesia is the Law of the Republic of Indonesia No. 18/2012 on Food, or the Food Law. The Food Law defines food safety as the conditions and efforts to ensure food is safe, hygienic, of high quality, nutritious, aligned with religious beliefs and cultural needs, and free from biological, chemical, and other contaminants that can interfere with, harm, and endanger human health (Article 67). It focuses on food safety issues in production and sales through a risk-based approach. Chapters VII and VIII (Articles 67–107) regulate sanitation, the use of food additives, genetically engineered food, food irradiation, food packaging, food safety and quality assurance by businesses, halal assurance, food labelling, and food advertising. Since the Food Law was passed in 2012 when online food delivery and ordering were still in their infant stages (NA-DFC, 2018b, p. 17), the Food Law does not address online sales of food, online food delivery, and the role of third parties.

In contrast to the previous Food Law No. 7/1996, the 2012 Food Law mandates that subnational governments share responsibility for ensuring food safety as part of Indonesia's broader decentralization efforts. Law No. 23/2014 on Regional Governments therefore contains provisions on food safety and delegates responsibility to subnational governments based on the areas of food distribution: the central government is in charge of the safety of international and cross-provincial fresh food distribution, provincial governments ensure safety of cross-city fresh food distribution, and city or district governments take care of safety of fresh food distributed within the city.

The Food Law was further operationalized into Government Regulation No. 86/2019 on Food Safety, which outlines the requirements, responsibilities, and the authority in charge, as well as sanctions for violation. The requirements and responsibilities can be classified broadly into three areas: standard issuance, pre-market certification, and post-market supervision.

Consistent with Regional Governments Law No. 23/2014, the setting of standards remains under central government authority through NA-DFC and the Ministry of Health. Meanwhile, roles and responsibilities for pre-market certification and post-market supervision are fragmented into different ministries, agencies, and local governments depending on the type of food and the scale of the business.

Roles and responsibilities for pre-market certification and post-market supervision are fragmented into different ministries, agencies, and local governments depending on the type of food and the scale of the business.

**Table 1.**  
**Roles and responsibilities of ministries and agencies for processed and ultra-processed food according to Government Regulation No. 86/2019**

Issue	Scope	Responsible ministry/agency
Standard issuance	Contaminants in processed and ultra-processed food	NA-DFC
	Contaminants in ready-to-eat processed meals and processed food by household enterprises ( <i>Industri Rumah Tangga</i> or IRT)	Ministry of Health (MOH)
	Food additives, genetic modification, irradiation	NA-DFC
	Food packaging for packaged food	NA-DFC
Pre-market certification	Food Safety and Quality Assurance Certification	NA-DFC
	Distribution permits for processed and ultra-processed food (except for household enterprises and for food with less than seven days of shelf life) ( <i>Kode Makanan Dalam</i> or MD Code and <i>Kode Makanan Luar</i> or ML Code)	NA-DFC
	Production permit for processed food from household enterprises (except for food with less than seven days of shelf life)	City/district government, through Public Health Office
	Production facility certification for ready-to-eat meals	City/district government, through Public Health Office
Post-market supervision	Processed and ultra-processed food (except for food from household enterprises)	NA-DFC
	Processed food from household enterprises	NA-DFC, city/district governments, and Ministry of Health
	Ready-to-eat processed meals	NA-DFC, city/district governments, and Ministry of Health
	Food packaging	Ministry of Health, Ministry of Industry, Ministry of Trade, NA-DFC

“The process of pre-market certification is onerous for micro-, small-, and medium-sized enterprises (MSMEs) and acts as a disincentive for them to register.”

While the Food Law and the Food Safety Regulation both include pre-market certification and post-market supervision, enforcement of these regulations is difficult (Interview 4 & 10). The process of pre-market certification is onerous for micro-, small-, and medium-sized enterprises (MSMEs) and acts as a disincentive for them to register.

For example, the process and requirements to obtain a micro-sized household industry permit (*Produk Industri Rumah Tangga* or P-IRT) are set by the local government, but are based on NA-DFC Regulation No. 22/2018 on Production Certificate Guidelines for Household Industry Food. In Jakarta, the process requires

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the applicant to submit 17 different documents and go through nine steps (DKI Jakarta, 2020). However, in Surabaya, the process requires 21 documents and 19 steps (Surabaya Single Window, 2020). Both Jakarta and Surabaya require submission of a Food Safety Certificate to help raise awareness among household enterprises. In addition to the fact that the P-IRT process is challenging, MSMEs are also exposed to illegal mark-up fees by scalpers, called *calo* (Puri, n.d.). This may explain their hesitation to register and the prevalence of informal MSMEs in Indonesia.

Problems with pre-market certification undermine the food safety system. The products of informal businesses are harder to trace and monitor (Interview 3 & 4). To encourage businesses to register, Surabaya implements the Surabaya Single Window program, which allows parts of the registration process to be conducted online. The online system also provides standard protocols and information about administrative fees, reducing opportunity for illegal mark-ups.

Meanwhile, post-market supervision suffers from a lack of skilled human resources and expertise in Indonesia (McCarthy, 2004, p. 1201). NA-DFC claims that they face a staff shortage and are unable to keep up with the increased workload caused by the expansion of the food market. NA-DFC needs to improve its pre- and post-market supervision of processed and ultra-processed food (NA-DFC, 2018b, p. 16, p. 18; Putri et.al., n.d., p. 14; Adisasmito, p. 20–21), but increased staff does not guarantee better performance and supervision. Lack of knowledge and expertise at NA-DFC also hinders effective food safety management.

While the existing laws and regulations require central and local governments to maintain knowledge and competence<sup>5</sup> in food safety, human resources and training are lacking (NA-DFC, 2018b, p. 17; Azhari et al., 2010; Angriawan & Mutiarin, 2019; Simarmata, 2016, pp. 12–13). In 2018, 17.1% of NA-DFC staff members did not reach the required competence standards (NA-DFC, 2019a, p. 285). For example, 10.58% of NA-DFC staff working for the Deputy for Processed Food Supervision had no bachelor or higher education degrees. The situation is worse at the local level, where 32.61% of the personnel at local NA-DFC chapters (usually called *Balai Besar POM*, *Balai POM*, or *Loka POM*) have no higher education degree.

Delegating responsibility for post-market supervision to subnational governments can also create unequal food safety standards and practices, since they depend on each city/district's capacity.

Decentralization is generally seen as positive because it transfers political and administrative functions to local governments (Hadiz, 2004, p. 697–698). In the case of food safety, this keeps the supervision process closer to merchants and consumers. However, subnational governments have lower capacity, both in terms of delivering services and managing finances (Nasution, 2016; Interview 4 & 10). When local governments do not prioritize food safety as a key service or program, they provide insufficient funds for adequate food safety supervision (Hanif, 2017, p. 21). Lack of funding is generally cited among the reasons why local governments cannot hire enough staff, build proper infrastructure, or conduct training for businesses to help ensure food safety

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<sup>5</sup> The required competence level for supervisors in central and local governments is stipulated in Article 53 of Food Safety Regulations.

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(DPR, 2019; Angriawan & Mutiarin, 2019, p. 58; Hanif, 2017, p. 56; Putri et al., n.d., p. 12; Saputra, 2014; Azhari et al., 2010). Furthermore, coordination between the NA-DFC and Ministry of Health and local governments remains sporadic, lacking a formal mechanism. Thus, the enforcement depends heavily on the initiative of the local governments (Interview 4 & 10).

Furthermore, the involvement of subnational governments adds complexity to the coordination of national policy, which may undermine effective policy planning and implementation in Indonesia (Hadiz, 2004; McCarthy, 2004, p. 1200; Interview 4 & 10). The fragmentation of responsibility for Indonesia's food safety makes coordinating the activities of investigators from NA-DFC, local governments, and local supervisors from local chapters of NA-DFC more challenging (NA-DFC, 2018b, p. 17–18, p. 43; Tresya, 2018; Hermanu, 2016; Angriawan & Mutiarin, 2019, p. 55; Putri et al., n.d., p. 15; Interview 4 & 10). This has affected the technical control of expired and unregistered food in circulation (Saputra, 2014). Fragmented responsibility can also delay the response to outbreaks of food poisoning since the Food Safety Regulation mandates that in case of food safety related outbreaks and emergencies local government containment efforts should be coordinated with or approved by the Ministry of Health and NA-DFC (Article 57).

The coordination of all food safety efforts is done through the National Food Safety Network (*Jejaring Keamanan Pangan Nasional* or JKPN), directed by the Coordinating Ministry for Human Development and Culture, and implemented by NA-DFC (NA-DFC, 2018a). JKPN works under the Integrated Food Safety System (*Sistem Keamanan Pangan Terpadu* or SKPT), which aims to ensure food safety from farm to fork (NA-DFC, 2018a). JKPN has three working groups: the Food Intelligence Network (*Jejaring Intelijen Pangan* or JIP), the Food Safety Control Network (*Jejaring Pengawasan Pangan* or JPP), and the Food Safety Promotion Network (*Jejaring Promosi Keamanan Pangan* or JPKP) (NA-DFC, 2013; NA-DFC, 2018a). These three working groups play different roles. They exchange information such as surveillance data, inspection, and food safety research (JIP); they cooperate in preparing standards and procedures, inspect and certify food production and distribution permits, and conduct lab tests (JPP); and they develop food safety information and education materials and communication programs for the public (JPKP). However, the SKPT and the JKPN are still considered weak, and this leads to poor coordination among government entities and an ineffective implementation of the food safety system (Hermanu, 2016, p. 426; Hermanu & Handayani, 2019, p. 8–10).



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## B. Regulations on Food in E-Commerce and Online Food Delivery

Neither the Food Law nor the Food Safety Regulation No. 86/2019 address food sales in e-commerce. Food sales in e-commerce are covered by Government Regulation No. 80/2019 on E-Commerce or the E-Commerce Regulation and its derivative, NA-DFC Regulation No. 8/2020 on the Supervision of Drugs and Foods that are Circulated Online. The E-Commerce Regulation covers transactions of all kinds of goods and services and regulates business responsibilities, including data collection, electronic advertising, confirmation of electronic transactions, personal data protection, secured electronic payments, shipping, exchange and cancelation procedures and dispute settlement in electronic trade. The E-Commerce Regulation and Food Safety Regulation also provide a redress mechanism as one possible administrative sanction in case of disputes or violations in online and/or food sales through the Ministry of Trade (online transactions), NA-DFC (processed and ultra-processed food), other ministries<sup>6</sup>, or local governments.

Meanwhile, NA-DFC Regulation No. 8/2020 focuses on the supervision of drug and food distribution through e-commerce. It covers sales through merchants' own platforms or through electronic system operators/platforms, including third-party delivery partners, that were not covered by the Food Law and the Food Safety Regulation. With this regulation, merchants who sell unsafe food in e-commerce can be sanctioned by the NA-DFC in the form of warnings, recommendations to close the business, account suspensions on e-commerce platforms, and food recall.

There is a discrepancy between NA-DFC Regulation No. 8/2020 and the previous Food Safety Regulation in pre-market certification. The Food Safety Regulation (Article 34) exempts household enterprises from the requirement that they obtain a distribution permit (*izin edar*). However, NA-DFC Regulation No. 8/2020 (Article 16) requires that all processed and ultra-processed food sold online must have a distribution permit, except for ready-to-eat meals. Which is the relevant authority is unclear because the Food Safety Regulation puts household enterprises under the authority of city/district governments while distribution permits are the responsibility of NA-DFC.

Regulatory gaps also exist in the supervision of food sales in e-commerce. NA-DFC Regulation No. 8/2020 does not govern third parties in food sales. The regulation acknowledges the role of third-party delivery persons but does not regulate technical mechanisms and guidelines to determine last-mile liability and proper supervision of the delivery process between food vendors and delivery persons. This problem is partially the result of the failure to clearly stipulate measures concerning distance selling and traceability<sup>7</sup> (Khoifin & Nimsai, 2018).

Traceability refers to the ability to monitor the product, trace its history and distribution, to store records systematically, and to check food safety and quality control across the supply

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<sup>6</sup>Other ministries may become involved based on the type of food sold. The Ministry of Agriculture and Ministry of Marine Affairs and Fisheries for fresh food, Ministry of Industry for industrial-engineered food. Asking for redress can also be done through local governments (provincial and city/district level), depending on each institution's responsibility.

<sup>7</sup>The Food Law and Government Regulation 86/2019 does not explicitly specify the process of food traceability. While the traceability systems outlined in the Hazard Analysis Critical Control Points (HACCP) or International Organization for Standardization (ISO) 22000, remain voluntary; the only government regulation that mentions the transport/shipping process (one of the traceability components) for distance selling is Government Regulation No. 80/2019. Indonesian firms mainly implement voluntary measures and traceability systems that go beyond legal requirements (Khoifin & Nimsai, 2018).

“ Without proper traceability, it is hard for regulators and businesses to track the information required through the food supply chain, especially in the case of a food recall.

chain from farm to fork as required (Narsimhalu et al., 2015, p. 18). Traceability for Indonesia’s MSMEs remains challenging because of the limited technology and legal framework for enforcement (Khoifin & Nimsai, 2018, p. 153–154). Without proper traceability, it is hard for regulators and businesses to track the information required through the food supply chain, especially in the case of a food recall. Online marketplaces allow businesses to distribute their products easily across jurisdictions, further complicating the process. Improved traceability would provide data and records of where and how the food is being distributed.

The only requirement for third-party delivery persons in NA-DFC Regulation No. 8/2020 regards the packaging during delivery, which protects food from possible contamination. Article 19 regulates the responsibilities of merchants and/or third parties during the delivery process: they must prevent damage to food packaging during delivery, deliver food in a closed container, and maintain delivery conditions appropriate to the characteristic of the product. Food delivery services often use additional plastic bags over the closed container required by the regulation as a first layer of food packaging or to allow delivery persons using motorcycles to carry the food conveniently.

The use of this extra layer of food packaging runs against local government initiatives to reduce the use of plastic bags. As of July 2020, 23 city/district governments and three provincial governments have banned single-use plastics, including Indonesia’s capital, Jakarta. Regulation of single-use plastics are emerging in response to increased awareness of the negative environmental impact of plastic waste. During the World Economic Forum Annual Meeting, Indonesia’s Coordinating Minister for Maritime Affairs and Investment announced plans to reduce plastic waste by 70% within five years and, even more ambitiously, to be entirely plastic pollution-free by 2040 (Pandjaitan, 2020). The Ministry of Finance also announced plans to impose nationwide tariffs on plastic (Ministry of Finance, 2019).

Single-use plastic regulations vary by jurisdiction. DKI Jakarta Provincial Regulation No. 142/2019 on the Use of Environmentally-Friendly Shopping Bags took effect on July 1, 2020 and prohibits the provision of single-use plastic bags in supermarkets and by merchants located in shopping malls, markets, or convenience stores, including restaurants and other food merchants. The regulation requires reusable shopping bags instead of single-use plastic bags. The ban does not differentiate between types of single-use plastic bags, so alternatives that are more environmentally friendly such as plastic bags made out of recycled plastics or

“ Bans on single-use plastics have unintended consequences for food merchants and food delivery services.

biodegradable bags made of plants such as cassava or seaweed are also prohibited (World Economic Forum, 2018; Indonesia Plastic Recycling Association, 2018; Interview 11). Bali Provincial Regulation No. 97/2018 went further and banned the use of single-use plastic bags, plastic straws, and styrofoam for all businesses. Since the regulations were recently adopted, it is too early to say if they are effective at reducing Indonesia’s plastic waste.

Bans on single-use plastics have unintended consequences for food merchants and food delivery services. According to anecdotal evidence from interviews with food delivery drivers in DKI Jakarta after the ban came into force, merchants and drivers have adapted to this regulation by switching to paper bags or their own reusable bags to carry food (Interview 8 & 9). These alternatives tend to be less suitable for transporting food. Paper

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bags can tear easily under moderate weight and are not waterproof (Carbon Neutral Charitable Fund, 2020), while reusable bags may pose contamination risks when reused for multiple purposes and seldom washed (Williams et al., 2011).

The Covid-19 pandemic has raised concerns about transmission through reusable bags, especially to food handlers, who touch many bags during their daily routine. This concern has led some states and companies in the United States to roll back their single-use plastic bag ban (Calma, 2020; Scaraboto, Joubert, & Gonzalez-Arcos, 2020). Without suitable alternatives in which to safely transport food, the single-use plastic ban adds food safety risks in food delivery.

Biodegradable or compostable bags have been touted as potential replacements for conventional plastic bags. However, they are considerably more expensive due to costly materials and complex production process (Cho, 2017). Furthermore, their environmental merit is debatable. A study found that compostable or biodegradable bags have varying deterioration rate in soil, water, or open-air, with no conclusive evidence that they break down more quickly than conventional plastic bags (Napper & Thompson 2019). Investment in durable and environmentally friendly alternatives to plastics is important, but existing technology is costly and as a result demand is limited, especially from more cost-conscious MSMEs (World Economic Forum, 2020, p. 15; Purwoko & Wibowo, 2018).

The government can accelerate adaptation of plastic alternatives by incentivizing the industry to innovate and to adopt new technology (World Economic Forum, 2020, p. 33) through policies such as subsidies for research and development of biodegradable materials rather than standard plastic (Purwoko & Wibowo, 2018). Tax relief, such as tax credits and reduction in corporate tax rates, can act as an incentive to invest in environmental technology and research, while subsidies can lower the price of plastic alternatives in order to boost production and consumption of these alternatives.

The Organization for Economic Cooperation and Development (OECD) (2013, p. 34) suggests encouraging research, innovation, and investment through grants, loans and subsidies; tax incentives and fiscal measures; and measures to reduce the production costs of bioplastics. Malaysia, Japan, South Korea, and China offer tax breaks to companies undertaking research and investment in the sector (OECD, 2013, p. 37). Research by Haddad et al. (2018, p. 7) found that subsidizing bioplastics consumption can generate a 2–4% decrease in the production of fossil-based plastics.

The regulatory gap in online food sales is expected to be filled by Article 23 of a proposed Food and Drug Control Bill. The current draft would require distributors of online food (processed and ultra-processed) to implement all food safety standards and requirements, apply for the necessary permits, ensure good production and distribution practices, and provide the necessary labelling. This bill is on the list of legislative priorities (Program Legislatif Nasional or Prolegnas) in the House of Representatives and is under deliberation in parliamentary Commission IX, which oversees health, labor, and population issues (NA-DFC, 2020b; DPR, n.d.).

## PRIVATE SECTOR INITIATIVES

Because food safety enforcement by the government alone is difficult given to the number of informal MSMEs as well as institutional and regulatory challenges, food safety also relies on private sector initiatives by food merchants and third parties in e-commerce. Assessments of food safety systems in China and the European Union suggest that a holistic enforcement system for food safety in e-commerce must involve the private sector through public-private co-regulation and private self-regulation working in tandem with government enforcement (New Markets Lab, 2019). The OECD (2015) also notes that industry self-regulation can complement government regulations to address consumer issues.

Self-regulation to enforce food safety standards is also in the interest of the private sector. Companies must be able to meet consumers' increasing demands for food safety and hygiene in order to win the market (Johns, 2015). If a merchant or company fails to supply safe food, they risk damaging their reputation, losing revenue and market share, facing sanctions or penalties, or even legal claims that may incur considerable costs (Henson & Hooker, 2001).

Compliance to food safety requirements among Indonesia's restaurants and food merchants depend on the procedures required and the size of the merchant. Thio dan Wijaya (2010, p. 642) found that restaurants in Surabaya have a relatively high compliance rate in maintaining good conditions for their ingredients and ready-to-eat meals, avoiding food contamination, and ensuring the cleanliness of utensils. Still, there was a lower compliance rate in washing fruits and vegetables and keeping and serving food at an appropriate temperature. The same study found that medium-sized restaurants are more likely to comply than small restaurants (Thio & Wijaya, 2010).

“**Food aggregator apps also self-police by developing standard operating procedures for their online food delivery services.**”

A study of street-food vendors in Jakarta found that most are already aware of the food safety risks caused by infrequent hand washing, not using soap, and inadequate dishwashing, but that poor access to washing facilities and financial resources meant that this awareness was not put into practice (Vollaard et al., 2004).

Food aggregator apps also self-police by developing standard operating procedures for their online food delivery services. They apply sealer tape to demonstrate to the consumer that food has been packaged properly after it leaves the restaurant and safely handled during the delivery process. This measure helps both consumers and apps by preventing contamination during the delivery and reducing the risk of food safety issues and consumer complaints. In addition to sealer tape, apps offer shipment information cards (*Kartu Keterangan Pengiriman*) to help ensure that restaurant staff and delivery partners have passed temperature checks and are healthy. They also provide training and reminders for merchants to follow food safety standards and Covid-19 protocols (Grab Indonesia, 2020b; Gojek, 2020c).

Platforms also provide consumer redress mechanisms. Complaints, such as opened food packaging, mistakes with an order, late delivery, and cases of food poisoning, are managed by

the platforms. Customers can request immediate follow-up, but the terms and conditions of the platforms specify that platforms cannot be held liable for any food safety issues. GrabFood explicitly states that food safety issues are the liability of the merchants while GoFood's terms and conditions state that merchants are responsible for food quality and safety. (Gojek 2020d; Grab 2020). These terms are in line with Article 18 of E-commerce Regulation No. 80/2019, which also holds the merchants and not the platform liable. This is reasonable because online food delivery platforms act only as mediators between customers and merchants or delivery persons in cases of a dispute. If merchants appear in violation of food safety standards, the platforms can also impose administrative sanctions on merchants or delivery persons, including the suspension of service (Gojek, 2020d; Grab, n.d.). Upon investigation of customer complaints, Gojek also would refund the food purchase (Interview 12).

the terms and conditions of the platforms specify that platforms cannot be held liable for any food safety issues.

Finally, food aggregator apps have initiated green campaigns. These require customers to request single use plastic cutlery by ticking a box in the app rather than providing it automatically (Gojek, 2020b; Grab Indonesia, 2020c). Gojek reported that 17.4 times as many merchants have chosen to use this option since early 2019 and that 97% of consumers chose not to use single-use cutlery and plastics when they must opt in. They calculated that this prevented 6.2 tons of single-use plastics waste in 2019 (Gojek, 2020b). As part of the green campaign, food aggregators have also started providing insulated delivery bags for drivers to further reduce the use of plastic bags—but this option so far is still being rolled out gradually with priorities for drivers whose GoFood orders are high (Gojek, 2019; Interview 12).

## A. International Experience of Private Sector Initiatives

While Indonesia's private sector initiatives on food safety are still relatively new and unsystematic, private sector initiatives in other countries and economic communities are more robust and can offer lessons for Indonesian governments and companies. Particularly useful are experiences in the European Union and in China.

The EU practices public-private collaboration in setting standards and their implementation, enforcement, and monitoring. This co-regulation is meant to increase the flexibility of regulated businesses, improve the monitoring role of private bodies, enhance rule compliance and reduce government expenditures (Rouviere & Castwell, 2012; Narrod et al., 2009; Chen et al., 2015; Hood et al., 2001). It incentivizes compliance through effective inspection regimes, market-based reputational mechanisms, effective penalties, and private codes of practice (Martinez et al. 2007; Chen et al., 2015). Voluntary food safety assurance standards, such as ISO 22000, are widely used in the European food industry in addition to compulsory standards of company-based Hazard Analysis Critical Control Points (HACCP) in the EU.

As in Indonesia, the EU is also struggling to enforce food safety regulatory requirements for online businesses. Non-registered food businesses can easily enter and exit the online marketplace but are difficult to identify (European Commission, 2018). Recognizing this challenge, the European Commission launched the first EU-coordinated programme on online-offered food products in 2017 (European Commission, 2018), which allows cross-border controls and the inspection of traders. Administrative assistance can be requested from an integrated online system for

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Administrative Assistance and Cooperation. Health concerns can be raised via the Rapid Alert System for Food and Feed (RASFF). The Better Training for Safer Food (BTSF) programme by the Commission also includes a course on food investigation techniques in e-commerce for food inspection bodies across the EU (AENOR, 2017).

The Chinese cities of Beijing and Shenzhen have both introduced co-regulation in their food safety systems (New Markets Lab, 2019; Liu et al., 2019). These systems facilitate information sharing by e-commerce platforms and private food companies and require that they set aside food safety funds for risk assessments under the guidance of the municipal China Food and Drug Agency. Information sharing allows consumers to identify food safety violations, make informed decisions, and seek redress. This co-regulation system helps reduce the regulatory burden while improving the enforcement of food safety.

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## RECOMMENDATIONS

The food delivery platforms of two major ride-hailing platforms contributed IDR 18 trillion in 2018 and IDR 37 trillion in 2019, respectively, contributing USD 3.86 billion to the Indonesian economy (LD FEB UI, 2019; Tenggara Strategics & Centre for Strategic and International Studies, 2020). However, food delivery also carries unique food safety challenges.

While the regulatory and institutional frameworks for food safety in Indonesia have begun to address particular issues in e-commerce, enforcement remains challenging in a sector with many informal businesses and institutional challenges. Three practical recommendations for regulatory and institutional reforms would support the continued growth of this market while improving consumers' access to safe food.

### A. Simplify pre-market certification for the household industry

It is hard to monitor informal businesses or to trace their activities when violations of food safety occur. Informal businesses are also more likely to do harm if they are unaware of food safety standards. NA-DFC found that half of unregistered food in Indonesia is not safe for consumption. Formal market entry through pre-market certification could help to address these issues, but it is a complicated and burdensome process, especially for household enterprises. As a result, many merchants in Indonesia's food sector remain informal.

The discrepancy between permit requirements set by Food Safety Regulation No. 86/2019 and NA-DFC Regulation No. 8/2020 makes the situation worse. The NA-DFC Regulation should be amended to clarify permit requirements for food sold online. Since the permit for household enterprises is covered by the P-IRT, another distribution permit should not be required.

Since the pre-market certification authority for household enterprises lies with the city/district government through its public health office, simplifying pre-market certification depends on initiatives taken by each city/district government. These governments should consider reducing the administrative requirements and simplifying the process of registering a food business. The registration process of MSMEs should aim to improve their knowledge and practices instead of punishing them for formalizing (World Bank, 2000), improving their knowledge of food safety standards and protocols in addition to providing supervision and ensuring compliance. Registration should be simple and require only low fees and little time to ensure that MSMEs are able to comply without causing business delays or enduring prohibitive costs. Registration would also help consumers to direct their complaints to responsible businesses.

A simplified certification can be processed through the Single Window Public Services Unit (*Unit Pelayanan Terpadu Satu Pintu*) for food licensing. The process should keep the required food safety certifications but reduce administrative requirements such as a business location map, photos of the production area, and copies of the sales log. NA-DFC and the Ministry of Health

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should also consider providing interactive information material<sup>8</sup> about food safety that can be accessed and used by the city/district governments during the licensing process to minimize costs and harmonize information about food safety regulations.

## B. Enable co-regulation in the regulatory framework for food safety

Co-regulation is a hybrid form of regulation in which public and private actors coordinate their regulatory activities and take a risk-based approach to food safety management (Martinez et al., 2013). Co-regulation acknowledges that lack of resources makes public enforcement of food safety difficult and addresses that difficulty through private sector involvement. On the other hand, 'pure' voluntary self-regulation is not sufficient in Indonesia, especially where awareness of food safety standards is lacking. The private sector must be able to effectively communicate with the government in order to adopt and comply with food safety regulations throughout the supply chain.

Co-regulation in the EU offers an example of a flexible and less ambiguous regulatory regime for food safety. Beijing and Shenzhen have also adopted co-regulation to allow for a greater role of the private sector in maintaining food safety.

Co-regulation of Indonesia's food safety system requires three components:

1. **Bringing the expertise of private actors into the policy planning process**

The engagement of private actors can enhance the results of regulatory measures. It enables them to adapt to industry-specific requirements, potentially reducing compliance costs (Martinez et al., 2013, p. 1109). Engagement can be achieved by bringing private actors into the policy process through stakeholder consultations beginning at an early stage of the regulatory decision-making process. This could take the form of a public-private dialogue during the drafting of food safety policies. This should begin with the deliberation of the planned Food and Drug Supervision Bill to ensure that the private sector provides input and understands the rationale of the Bill.

2. **A regulatory framework for private sector involvement**

The government should assign a greater role to a private entity, or approve and acknowledge private sector oversight activities in their enforcement policies (Martinez et al., 2013, p. 1106). For example, the government can cooperate with business associations to provide a public 'warning list' of food businesses that do not follow food safety standards. In the current regulatory framework, such 'warning lists' are only issued by and between ministries, for example between Ministry of Trade and NA-DFC. Allowing business associations to monitor their members would protect consumers by aligning their protection with the reputation of the entire business sector. In addition, the government should regulate an effective information exchange between government and industry as a component of the Food and Drug Supervision bill currently under deliberation.

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<sup>8</sup> The requirements and specifications for food safety materials are stipulated in technical regulations, for example the NA-DFC Regulation No. 22/2018 on Production Certificate Guidelines for Household Industry Food Appendix D part (3) page 12–14 for the food from household industry.



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### 3. Strong relations between the government and consumers

Consumers also have an important role to play in co-regulation. The government should involve consumer associations in the regulatory process. Their voice can provide input to improve consumers' awareness of food safety standards as well as the complaints and redress systems for food safety issues once consumers can identify them.

## C. Revising the single-use plastic ban for processed food delivery

Local governments should consider easing plastic reduction policies for the delivery of processed food until better alternatives are available. Efforts by the private sector to provide reusable insulated bags for online food delivery drivers are still limited. DKI Jakarta and Bali, along with other local governments with plastic policies, should also consider extending the transition period of these policies for online food deliveries. Local governments should also reconsider allowing more environmentally friendly single-use plastic, such as those made from recycled plastic or biodegradable materials such as cassava and seaweed as a temporary solution for food deliveries that balances food safety and environment sustainability. However, in the long-term, durable zero-waste options such as insulated delivery bags must become more available in the market in order to comply with the regulation.

Since alternative single-use bags are more expensive, central and local governments should incentivize the private sector, including MSMEs, to propose sustainable, environmentally friendly packaging. The central government through the Ministry of Research and Technology should work with the private sector and civil society (including academics, research institute and non-governmental organizations) to support innovative efforts to find viable alternatives to plastics through research and development. Finally, fiscal incentives, such as tax relief or minimum tax rates or subsidies, should be given to enterprises that develop these alternatives.

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## Interviews

Interview 1 – An academic in law at Sekolah Tinggi Hukum (STH) Jentera (2020, January 17). Personal communication.

Interview 2 – A consumer association (2020, January 17 & June 9). Personal communication.

Interview 3 – Ministry of Trade (2020, February 6 & June 29). Personal communication.

Interview 4 – A professor in food safety at Institut Pertanian Bogor (2020, February 11). Personal communication.

Interview 5 – A business association (2020, February 14). Personal communication.

Interview 6 – An industry association (2020, May 5). Personal communication.

Interview 7 – A researcher in public health (2020, June 19). Personal communication.

Interview 8 – GoFood Driver (2020, July 6). Personal communication.

Interview 9 – GoFood Driver (2020, July 7). Personal communication.

Interview 10 – Food Safety Professional Association, former head of NA-DFC. (2020, July 8). Personal communication.

Interview 11 – DKI Jakarta Provincial Environmental Agency (2020, July 13). Personal communication.

Interview 12 – A technology company in food delivery services (2020, July 27). Written statements.



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