



Briefing Note

Protecting Consumers in
Lebanon: The Need for
Effective Food Safety
System

K2P Briefing Notes quickly and effectively advise policymakers and stakeholders about a pressing public issue by bringing together global research evidence and local evidence. K2P Briefing Notes are prepared to aid policymakers and other stakeholders in managing urgent public health issues. K2P Briefing Notes describe priority issues, synthesize context-specific evidence, and offer recommendations for action.



Briefing Note

+ Included



Description of a priority issue



Synthesis of contextualized evidence



Recommendations for addressing the issue

× Not Included



Does not conduct a **comprehensive review of the literature** but relies on a quick assessment of databases



Faculty of Health Sciences
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K2P Briefing Note

Protecting Consumers in Lebanon: The Need for Effective Food Safety System

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Speaking Notes

Speaking Notes

-> Food safety has a major impact on the health of the population and the economy of the country. Pathogenic microorganisms are being detected in Lebanese foods, food poisoning outbreaks are being reported, and some Lebanese food product exports are being rejected while no changes have been made in the food safety practices.
-> To date, there is no food safety law in Lebanon, there are only decrees from the 1960s and 1970s which are outdated.
-> There are nine agencies in Lebanon that govern food safety with overlapping functions and lack of accountability
-> Lebanese food safety practices do not conform to international standards and do not ensure the safety of Lebanese consumers
-> The current draft food safety law suggests a centralized approach to the food safety system coordinated by an independent food safety board and authority
-> The Briefing Note reports on food safety system models and how some countries restructured their food safety systems as well as implementation considerations
-> The new food safety law in Lebanon should be context-specific and accompanied by appropriate legislative decrees that take into account implementation considerations

Content

Purpose

The purpose of this Briefing Note is to shed light on the current situation in terms of the food safety system and practices in Lebanon, clarify problems and offer a recommendation.

Issue

Recently, there have been serious public concerns about food safety in Lebanon. In November 2014, the Lebanese public has been overwhelmed with the latest food contamination scandal when the Minister of Public Health publicized a list of restaurants, supermarkets and other food provider services that did not meet the ministry's food regulation standards with some products testing positive for salmonella, E.coli, and obligate aerobes.

This adds to already existing concerns about food safety in Lebanon as illustrated by several cases of spoiled food, expired food (The Daily Star, 2013), the food poisoning outbreaks (FAO/WHO, 2005), and the use of prohibited preservative "Natamycin" in the staple Lebanese food product "Labneh.

Despite recurring incidents and public concerns about food safety and the weak control over food production in Lebanon, the food safety practices have not changed.

Background and Current Situation

Food safety has an impact on national economy and public health (Kamleh et al, 2012). The food industry makes up most of the factories in Lebanon (18.2%), involves 25% of total workforce, and produces the number one export (food) in Lebanon (Bissat, 2014). It is a 1.7 billion \$ industry and despite the worsening economy and political turmoil, food exports from Lebanon have been on the rise with a 55% increase since 2009 (Bissat, 2014). Despite the importance of the food sector to the Lebanese economy and industry, food safety is still a major issue.

Background to Briefing Note

A K2P Briefing Note quickly and effectively advises policymakers and stakeholders about a pressing public issue by bringing together global research evidence and local evidence.

A K2P Briefing Note is prepared to aid policymakers and other stakeholders in managing urgent public health issues.

A K2P Briefing Note describes priority issues, synthesizes context-specific evidence, and offers recommendations for action.

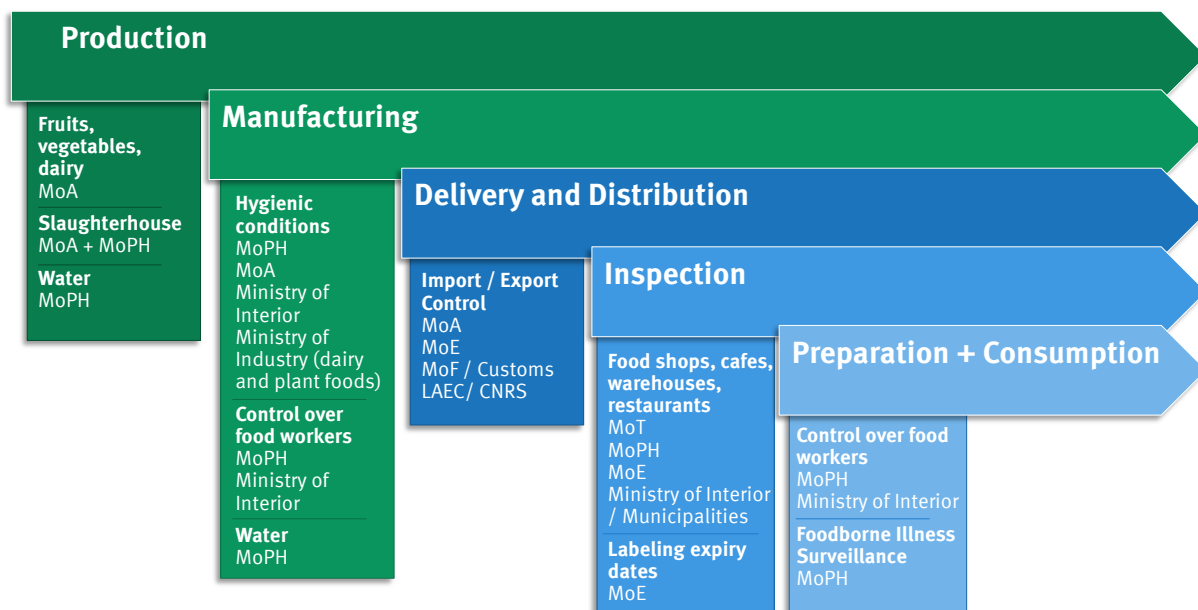
The preparation of the briefing note involved six steps:

- 1) *Identifying and selecting a relevant topic according to K2P criteria*
- 2) *Appraising and synthesizing relevant research evidence*
- 3) *Drafting the Briefing Note in such a way as to present concisely and in accessible language the global and local research evidence;*
- 4) *Undergoing merit review*
- 5) *Finalizing the Briefing Note based on the input of merit reviewers.*
- 6) *Submitting finalized Briefing Note for translation into Arabic, validating translation and disseminating through policy dialogues and other mechanisms.*

Studies indicate that the upgrade in international food standards has hindered the food exports coming from developing countries (Jongwanich, 2009). In fact, the FDA rejected nearly 27% of Lebanese, Syrian and Egyptian food exports (FAO/WHO, 2005). MOPH data indicates that in 2010 there were 1926 cases of food and waterborne illness in Lebanon (Harb, 2012). Local studies on the safety of Lebanese food have indicated the presence of pathogenic microorganisms such as E-Coli, Salmonella, Staphylococcus aureus, and Listeria Monocytogenes in levels that exceed international standards of safety (Saleh et al, 2009; Kassaiify et al, 2010, Harakeh et al, 2010). For example one study on Lebanese Shawarma sandwiches found that 47.5% of the samples contained high levels of salmonella (Harakeh et al, 2005).

Food safety in Lebanon is governed by a series of outdated decrees (Ex:1961 ministry of health law). Yet there still is no food safety law in Lebanon. There are nine agencies that govern food safety in Lebanon. The precise roles and responsibilities of the agencies are explained in the annex (A). There is no structure that oversees the totality of the functions of these agencies or coordinates activities among them.

Figure 1 Stakeholders in the Lebanese Food Chain



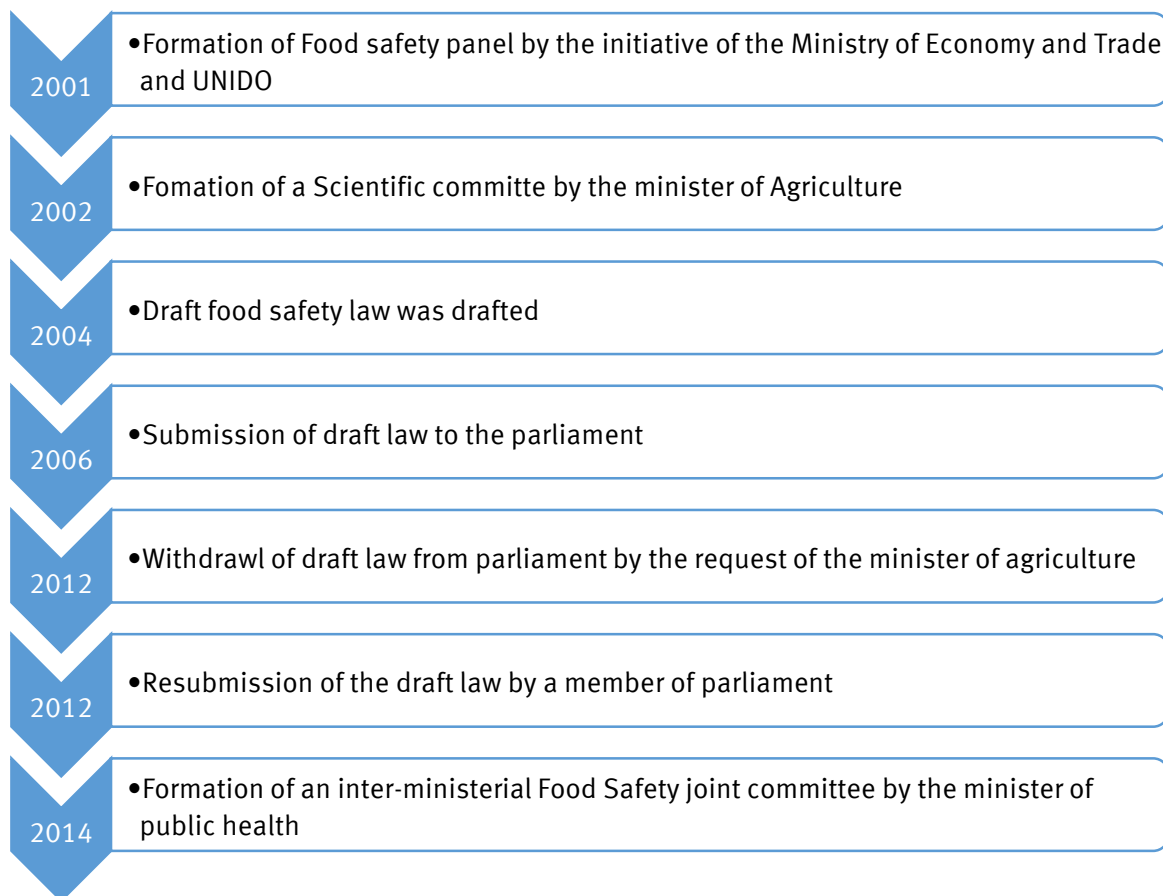
1: MOA: Ministry of Agriculture 2: MOPH: Ministry of Public Health 3: MOE: Ministry of Economy 4: MOF: Ministry of Finance 5: LAERC: Lebanese Atomic Energy Commission 6: CNRS: National Council for Scientific Research 7: MOT: Ministry of Tourism

Despite the presence of nine food related agencies, they have overlapping functions and poor coordination, lack of accountability, no existing food laws, no scheduled inspection programs, and poor control of microbiological and chemical hazards and food additives (Kamleh et al, 2012). These practices do not conform to

international standards as there are too many public institutions involved making their work ineffective.

Attempts to pass a comprehensive food safety law have been underway for nearly 13 years to no avail. Below is a timeline of the historical progress of the food safety draft law:

Figure 2 **Historical Progress of the Food Safety Draft Law (Kamleh, 2012; Berro, 2014)**



In November 2014, the Lebanese public has been overwhelmed with the latest food contamination scandal when the Minister of Public Health publicized a list of restaurants, supermarkets and other food provider services that did not meet the ministry’s food regulation standards with some products testing positive for salmonella, E.coli, and obligate aerobes. Most contaminations were attributed to general lack of hygiene standards from employees handling the food and polluted storage areas. The test results showed traces of human sweat and sewage water among other bacterial traces.

This generated a wide range of responses both from the public and government officials making food safety in Lebanon a pressing issue on the Lebanese cabinet’s agenda yet again. As a response measure, the Minister of Public Health has formally requested from the Ministry of Interior to close down some of the violating establishments that failed to comply with general food safety and hygiene regulations pending further investigation.

In March 2014, the use of a prohibited preservative by one of the Lebanese dairy producers stirred public concern and proved once again the weakness of the current system (Refer to annex B for details). This food safety “scandal” pushed the issue of food safety into the front of the agenda of policymakers and accordingly, the minister of public health formed an inter-ministerial Food Safety joint committee in April 1 2014 (MOPH, 2014). This committee is composed of the general directors of the ministries of public health, agriculture, industry, economy and trade and environment, in addition to a representative from the health parliamentary committee (MOPH, 2014). The Food safety joint committee was tasked with following up on developing a clear food safety coordination mechanism between stakeholders, to identify possible public health risks in commercial food products, and how to manage these risks up until a food safety law is passed (MOPH, 2014).

The draft food safety law offers a mixed approach to a food safety system that combines the centralized and integrated approach (to be discussed in table 1). This draft law suggests establishing an independent food safety authority and board under the auspice of the council of ministers that is responsible for food related policies, research, and standards as well as coordinating the function of the other ministries in regard to food control activities.

What we know from Evidence

-➤ There is a world-wide trend for governments to adopt stricter and more rigorous food safety control systems (India, European Union, China, Japan, Saudia Arabia, UAE...) (Jia & Jukes, 2013; Matsuo, 2013; Al-Kandari & Jukes, 2012; Al-Kandari & Jukes, 2011)
-➤ There are three basic approaches for food safety systems with evidence on advantages and disadvantages (FAO, 2005):

Table 1 **Approaches for Food safety systems**

Approach	Rationale	Advantages	Disadvantages	Countries
Single Agency Approach	A central authority, governmental or quasi-governmental, coordinates and implements all activities in the food control system	Minimizes duplication of activities Eliminates gaps Efficient use of resources	Weights heavily on governments and disrupts food control activities at the transition process	Canada, Ireland, KSA

Multiple Agency Approach	Many agencies and ministries are responsible for different aspects of the food control with one ministry coordinating food control activities and food law enforcement	Less expensive Minimal disruption of activities	Increases beaurocracy, duplication and fragmentation among all the bodies involved	Ethiopia, Oman, Qatar, South Africa
Integrated Approach	Allocation of responsibilities between ministries according to discrete areas in food control while creating a supra-ministerial authority to oversee and coordinate the responsibilities of the whole system	Less expensive Minimal disruption of activities Maintains effective collaboration across the food chain	If ministries do not collaborate, and responsibilities are not made clear then the system will fail.	Japan, China, European Union, Australia, New Zealand, Jordan, UAE

→ There is no one size fits all solution to a food safety system in a country. Instead, the choice of the approach is influenced by the context of the country, including: existing government policies, governance structures, political commitment, goals and needs of the food system, and resources available (FAO, 2005). However, FAO recommends adopting the centralizing approach which best achieves food safety control across the food chain (FAO, 2005). An assessment of the backdrop of the country should proceed the formulation of the food safety law (FAO, 2005). While context matters, proper legislation, and development of clear regulatory mechanisms, protocols and procedures is a crucial element of a successful food safety system (MacRae, 2011).

How other countries applied the food safety system approaches

Many countries have been restructuring their food safety systems to enhance national food control, examples are presented below:



- **Japan** used the integrated approach and through passing new legislation (Food Safety Basic Law) developed a new food safety organization (Food safety Commission) that was independent, coherent, and coordinated the functions of all the relevant ministries and agencies (Matsuo, 2013).
- **China** passed a new food safety law in 2009, which also adopted the integrated approach by integrating the inspection system, defining the

responsibilities of each authority and initiating a supra-ministerial food safety committee (Jia & Jukes, 2013).

-➤ **The European Union (EU)** in 2002, adopted the integrated approach by forming the European Food Safety Authority (EFSA) an independent scientific agency that is responsible for risk assessment and risk communication (Silano & Silano, 2013). This new system has enhanced the EU food safety system and has demonstrated capability in handling urgent and emergency issues (Silano & Silano, 2013).
-➤ **Australia and New Zealand** have also opted for the integrated approach ever since 1996 by establishing a joint system consisting of the Food Standards Australia New Zealand (FSANZ) authority and the development of a joint standards code (Healy et al, 2003). The FSANZ follows a risk analysis framework for decision making and conducts risk assessment and communication and makes a recommendation for risk management which is up to the governments of the Australian and New Zealand territories to implement (Healy et al, 2003). This led to greater control over the food safety system and easier compliance and enforcement activities (Healy et al, 2003).
-➤ **The United Arab Emirates (UAE)** also opted for the integrated approach and centred its food safety system around Hazard Analysis and Critical Control Point (HACCP) and risk analysis by developing a national food safety committee consisting of representatives from different ministries and agencies. The UAE is currently in the process of drafting the federal food safety law (Al-Kandari & Jukes, 2011).
-➤ **The Kingdom of Saudi Arabia (KSA)** used a centralized approach in its restructuring of the food safety system by establishing the Saudi Food and Drug Authority (SFDA) in 2003 that is made up of departments that cover the activities of the food chain (Al-Kandari & Jukes, 2012). There is no food safety legislation in KSA but the food safety law is in its final stages of being drafted (Al-Kandari & Jukes, 2012).

Although the context of these countries is different, their experiences show a trend towards restructuring food safety systems according to international standards and passing legislation to regulate food systems. Based on country experiences in the region (UAE, KSA, GCC) we have identified the following implementation considerations consisting of enabling factors and barriers: (Al-Kandari & Jukes, 2011; Al-Kandari & Jukes, 2012; Al-Kandari & Jukes, 2009)

Table 2 **Implementation Considerations in Restructuring National Food Safety Systems**

Enabling Factors	Barriers
 <ul style="list-style-type: none">Political commitment, leadershipAppropriate legislation, clear national policy, enforcementCoordination, communication, and transparencyPlanning for implementation (gradual process)Competent staffComputerized systems and upgraded laboratoriesDefining roles and tasks of different agenciesInvolvement of stakeholders across the food chainUse of international food safety systemsEducation training and awareness	 <ul style="list-style-type: none">Political unrest and instabilityResistance of stakeholdersWeak scientific and technical expertiseLimited resourcesDependency on third party accreditation agenciesPoor foodborne illness surveillanceShortage of auditors, staff and laboratoriesDisruption of food control activities in transitional periodLack of awareness of small food businesses on safety procedures

Recommendations

Recommendations

-➤ To protect consumers in Lebanon, multiple sources of evidence have emphasized the need for an effective food safety system in Lebanon. To accomplish this, a food safety law is needed in Lebanon. This would also have a positive impact on national economy and food exports by enhancing the competitiveness of Lebanese food products in the world food trade market through meeting international standards of quality (Jongwanich, 2009).
-➤ Based on evidence, the new food safety law should be context-specific, taking into consideration local applicability, implementation barriers, and political influences. This law should be accompanied by appropriate legislative decrees addressing inspection and responsibilities of inspectors, laboratory schemes, the role of ministries, import/export, licensing and other issues. The decrees should indicate how to transition food control activities from the current system to the suggested one taking into account limited resources and the resistance of stakeholders.
-➤ This law could be developed by conducting thorough assessment of the background of the food safety practices in Lebanon, analyses of the problem and underlying factors and identifying and appraising options for strengthening the food safety system. Such analysis should be the basis for holding deliberative policy dialogues.

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Annexes

Annex

Roles and Responsibilities of food safety agencies in Lebanon (Kamleh, 2012 & Ammar 2011)

Agency	Role and Responsibility
Ministry of Agriculture (MOA)	<ul style="list-style-type: none">Gives license for food plantsControl of imports and exports and main ingredientsControl of locally produced food (dairy, fruits, vegetables)Control of imported and exported live animalsControl over food processing and packaging and food industriesControl over slaughter houses?
Ministry of Public Health (MOPH)	<ul style="list-style-type: none">Gives license for water production, food additive production, for Snack outlets and offer health opinions for restaurant, catering and hotel licensingPreparation of food related bylawsControl over hygienic conditions in food plantsControl over slaughter houses?Control/inspection of restaurants café, shops, warehousesControl over food workersAnalysis of food samplesSurveillance of food borne illness
Ministry of Economy and Trade (MOE)	<ul style="list-style-type: none">Control of labeling/expiry datesProtection of Intellectual Property RightsControl of imports and exports and main ingredientsAnalysis of food samplesControl of canned foods, alcoholic beverages, juices, tomato pastes, vinegar & saltSending official reports to courtControl/inspection of restaurants café, shops, warehouses, supermarkets

Agency	Role and Responsibility
Ministry of Tourism (MOT)	Gives license to food service establishments Control/inspection of restaurants café, hotels
Ministry of Interior	Control over food workers Analysis of food samples Control over hygienic conditions in food plants Control/inspection of restaurants café, shops, warehouses
Ministry of Industry	Control over local dairy and plant food product manufacturing Renewal of Industrial Certificate Authentication of invoices and certificate of origins for export.
Ministry of Finance (MOF)	Gives license for selling alcohol Offers permission to import/export food after MOPH and MOA Analysis of food samples
LIBNOR	Development of standards for local Lebanese food products
LAEC/CNRS	Control of radiations and imported and exported foods

B: Natamycin in Labneh Incident

What Happened

- In March 2014 a local Lebanese TV news station conducted an investigation into the chemical composition of local staple Lebanese food product “Labneh” (concentrated fermented yogurt). This investigation included testing different brands of Labneh by sending samples to a credible Lab in Switzerland for analysis. It was revealed that one local Lebanese dairy producer was using the preservative “Natamycin” in Labneh in an amount of 54.3 mg/kg which did not conform to Lebanese and international standards (Kontar, 2014). This local producer admitted to the use of Natamycin and defended their position by saying this chemical was “natural”, “safe” (Alakhbar, 2014). This scandal caused a public panic and frenzy especially with claims that this chemical causes cancer.

The Facts

- **FDA:** The additive may be applied on cheese and cheese rinds as an antimycotic, in amounts not to exceed 20 milligrams per kilogram (FDA, 2013).
- **Codex Alimentarius:** Natamycin can be used as preservative for cheese analogues, processed cheese, ripened cheese, unripened cheese, and whey protein cheese with a maximum level of 40 mg/kg (Codex Alimentarius Commission, 2013).
- **Libnor:** Natamycin is not allowed to be used as preservative in “Labneh” and the only preservative that can be used on Labneh is sorbic acid at a maximum level of 50 mg/kg (Libnor, 1999).

Who was Responsible

- According to the current Lebanese food safety system, several institutions are responsible for controlling dairy production. Libnor develops the standards, the ministry of public health approves and controls the use of food additives, the ministry of industry controls the production of dairy and the ministry of economy and trade and the local municipalities control the sale and trade of dairy products (Ammar, 2011).

What went Wrong

- Poor communication between relevant ministries, institutions and dairy producers
- Lack of scheduled and systematic inspections of dairy production by the ministry of industry
- Lack of scheduled and systematic inspections by the ministry of economy and trade precisely on the packaging and ingredient list of food additives and preservatives of dairy
- Poor risk communication where ministries took too long to respond and allowed a public frenzy and scandal to take place.

Knowledge to Policy Center draws on an unparalleled breadth of synthesized evidence and context-specific knowledge to impact policy agendas and action. K2P does not restrict itself to research evidence but draws on and integrates multiple types and levels of knowledge to inform policy including grey literature, opinions and expertise of stakeholders.

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