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The present regulatory impact analysis was carried out by
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THE IMPACT OF MINISTERIAL
DECISION 950/1 ON FOOD AND BEVERAGES
PRODUCERS IN LEBANON

A Regulatory Impact Analysis

Food safety is the best strategy

When the competitive position of Lebanon's largest subsector of manufacturing is at risk of weakening locally or on export markets, alarm bells go haywire at business support institutions like chambers of commerce.

To be sure, food and beverages processing is the flagship of manufacturing industries: it employs the largest industrial work force; it produces the largest share of industrial output and accounts for the largest portion of industrial value added and the largest portion of exports; it has the highest gross fixed capital formation and has accumulated the largest total fixed assets; and it is the country's most successful import substituting manufacturing activity.



Weighty as the sector may be in our economy, it is only through adherence to international safety and quality standards that its competitiveness will be sustained. This calls for a comprehensive, holistic approach to food safety in order to ensure compliance at all levels of the value chain of the food and beverages cluster.

The ratification of a comprehensive food safety code, and the will to enforce its provisions, would go a long way in tackling many of the sector's woes and boosting consumer confidence. We hope the ministerial decision examined in the present impact analysis will turn out to be a step in the right direction.

The Beirut Chamber of Commerce values its collaboration with USAID in the preparation of this analysis. The research effort invested in the project did achieve the aim it set out to attain namely, to reach a quantitative assessment of the costs and benefits of compliance with safety, quality and environmental norms in the processing of food and beverage.

The exercise indeed reaffirmed our belief that our first, last, and best strategy to reinforce the activity's competitiveness and market foothold should remain one of strict adherence to the most stringent and demanding international food safety requisites currently enforced. Let the "Made in Lebanon" identifier evolve into a brand of safety and quality.

Mohamed Choucair

Chairman,

Chamber of Commerce, Industry and Agriculture of Beirut and Mount Lebanon

Improving the regulatory regime in Lebanon

Today's dramatically changing interconnected world pushes Lebanon closer to a competitive economy. As such, government has a key role to provide an environment of policies, regulations, institutions, and economic governance that enables the private sector to flourish and grow. Supporting the Government of Lebanon to break down expensive barriers to growth, job creation, and investment, USAID/Lebanon introduced the concept of Regulatory Impact Analysis (RIA) and econometric modeling to key private sector actors, and through this built an advanced cadre of economic policy activists.

By using RIA, the Government of Lebanon and private sector stakeholders now have the ability to make educated policy decisions about the potential effects of regulatory measures-of both the intended and actual net effects-in terms of costs and benefits to all parties affected by the regulation. This strengthens government and provides positive social and economic benefits to society.

USAID, through its World Trade Organization accession project, established five working groups to prepare RIAs for five existing or planned regulations. This particular RIA, an analysis of Ministry of Agriculture Decision 950/1 regarding new food processing policies, was prepared by the Chamber of Commerce, Industry, and Agriculture of Beirut and Mount Lebanon and a team of food processing stakeholders. The study represents a clear example of the influential role the private sector can play to improve the regulatory regime in Lebanon and how the Government of Lebanon can better serve its constituents from such analysis.

I look forward to following the positive efforts of this RIA and others in Lebanon and challenge government and the private sector to build and expand economic analysis efforts.

Heath Cosgrove

Director
Economic Growth, Water, and Environment
USAID Lebanon

THE IMPACT OF


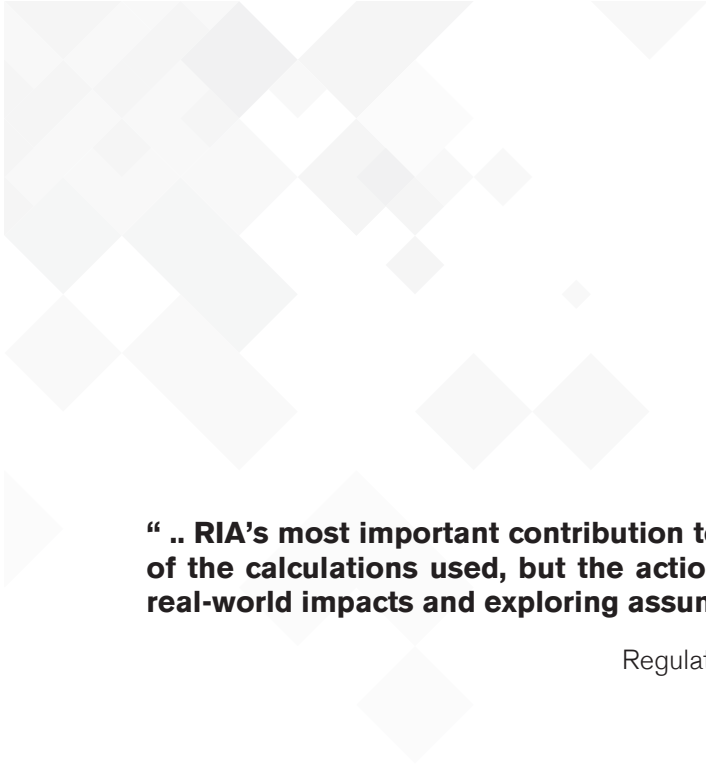
MINISTRY OF AGRICULTURE AND MINISTRY OF INDUSTRY DECISION 950/1 ON FOOD AND BEVERAGES PRODUCERS AND OTHER STAKEHOLDERS

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“ .. RIA’s most important contribution to the quality of decisions is not the precision of the calculations used, but the action of analyzing – questioning, understanding real-world impacts and exploring assumptions.”

Regulatory Policies in OECD Countries: From Interventionism to Regulatory Governance. OECD (2002), p 47.

THE IMPACT OF

MINISTRY OF AGRICULTURE AND MINISTRY OF INDUSTRY DECISION 950/1 ON FOOD AND BEVERAGES PRODUCERS AND OTHER STAKEHOLDERS

ABSTRACT

The research study sought to weigh the costs and benefits of a regulatory attempt to impose internationally approved and adopted guidelines to food safety and environmental protection on producers in the food and beverages (F&B) sector in Lebanon.

Mandatory procedures spelled out in Decision number 950/1 issued jointly by the Ministries of Agriculture (MoA) and Industry (MoI) were met with mixed response from the private sector. Producers promptly recognized the extensive potential benefits of integrating these procedures within their manufacturing structures, but were wary of excessive costs they may have to bear in order to comply with the requirements of the ministerial decision over a relatively short period of time.

The bottom-line outcome of the analysis is that the overall benefits from compliance with the Decision outweigh the costs by a narrow margin of 16 percent.

The cost-benefit analysis applied in the research study was based on results obtained from a two-part survey. One part was designed to detect producers' perception of the costs they expect to incur in complying with the stipulations of the ministerial decision. The other part tallied compliance costs as estimated through field visits to production site premises.

Estimating benefits was more problematic due to the absence of data on key parameters. The research study based its estimates of the 'business' component of benefits on projections of the food and beverages sector's production and exports. Substantial as they are bound to be, public health and environmental benefits remained difficult to assess.

The research study concludes with two sets of recommendations. In one set, proposals were put forth that may call for modifications to the ministerial decision that would raise its cost effectiveness. In another set, suggestions aim directly at underpinning the decision's two overriding objectives namely, food safety and environmental protection.

EXECUTIVE SUMMARY

The research study sought to reach an assessment of the costs and benefits to consumers, producers, government agencies, business support organizations, and other stakeholders identified arising from the enforcement of ministerial Decision 950/1.

The cost-benefit analysis was carried out in three stages. Cost bearers and beneficiaries were first identified; exhaustive lists of costs and benefits were then drawn and assigned to cost bearers and beneficiaries, and subsequently the exercise of quantifying costs and benefits was undertaken.

The quantification of costs and benefits to producers relied mainly on results obtained from a survey carried out by the research team. Based on a systematic justification of the weights assigned to costs and benefits to other stakeholders, the analysis reached the conclusion that the overall benefits from compliance with the ministerial decision outweigh compliance costs, but by a narrow margin of 16 percent.

To be sure, the research study made no attempt to quantify a broad swath of societal as well as business costs and benefits. These unquantifiable costs relate to public health and the environment; whereas to producers, impact on product and firm image, demand, and risk of product liability remains hardly quantifiable.

The sector's economic weight

The F&B sector in Lebanon is the largest among manufacturing activities. According to the Ministry of Industry's 2007 census "The Lebanese Industrial Sector", the activity comprises the largest number of industrial establishments, with 736 producers accounting for 18.2 percent of total industrial enterprises.

On six counts the activity is the largest within the industrial sector namely, the industrial work force, industrial output, industrial value added, fixed assets, gross fixed capital formation, and exports.

The sector's obstacles

It has been increasingly challenging for Lebanese F&B exports to access foreign markets as most countries are applying progressively more stringent standards and specifications on imports. By enforcing compliance with internationally accepted health and safety standards, ministerial regulation 950/1 would be by the same stroke facilitating the access of Lebanese F&B products to export markets.

The regulation

In January 2011, the MoA and the Mol jointly issued regulation number 950/1 requiring food and beverages manufacturing establishments to register with the Ministry of Agriculture, and subsequently go through an inspection designed to ascertain compliance with health and technical standards. The provisions of the regulation apply to processed food products, be they destined for local or for export markets. Upon assessment visits carried out by MoA inspectors, manufacturing facilities that are found to be compliant with the stipulations of the regulation are assigned a health registration number. That number is not only an attestation of compliance with the provisions of the regulation, but it is also practically a license to export F&B products and/or sell these products on the local market.

The regulation's rationale

Decision number 950/1 addresses critical concerns related to food safety, consumer protection, and the environment. 'Collateral' benefits pertain to easier access to increasingly more demanding export markets.

Cost bearers

Manufacturing enterprises in the F&B sector are the primary cost bearers, be they registered with the Mol or not. To comply with ministerial decision 950/1, these enterprises have to sustain costs that are far from being uniform in magnitude. These costs range from dauntingly high to the minor.

Excessively costly relocation may be the only solution in instances where inadequate or nonexistent sewage and waste disposal network renders impossible compliance with certain conditions of the ministerial decision. On a slightly lower rung of the cost scale are instances where compliance necessitates that the premises undergo major engineering works. Lesser modifications in the structure of the premises or changes in the production line(s) setup may give rise to moderate costs.

Producers may also have to budget outlays for advisory and staff training services, in addition to expenditure on workers' health care.

The survey

The main objective of the survey is three-pronged: to reach a meaningful estimate of the magnitude of compliance costs to manufacturers, to find out manufacturers' expectations as to the potential benefits to be derived from compliance and to reveal their ability and intention to shift compliance costs onto consumers.

The processing of responses to the survey is also designed to allow an inference regarding the extent to which compliance costs, viewed as a dependent variable, are a function of one or more size-indicator independent variables such as labor force, operating surface of premises, production scale, and number of production lines.

The questionnaire

The survey's questionnaire is subdivided into three core sections. In a section on costs, respondents are asked to evaluate the cost burden that each of 15 compliance requirement categories is expected to have. Producers are also asked to evaluate the period over which compliance costs will be incurred. A second section is intended to reveal respondents' perception of benefits, and a third section includes questions relating to the impact of the decision on producers' competitiveness and product prices.

I. INTRODUCTION

A. Objective of the impact analysis

The aim of this research study is to reach a conclusion as to whether the 'community' of stakeholders – consumers, producers, government agencies, and business support organizations – will be better off or worse off due to the enforcement of ministerial decision 950/1. This requires weighing the total of all current and future benefits against the total of all current and future costs expected to obtain from that enforcement. The decision would be deemed beneficial if total private and communal gains deriving from enforcing it outweigh total private and communal costs.

B. Methodology

For the purpose of this research study, costs and benefits refer to those deriving from the application of ministerial decision 950/1. Recurrent costs incurred by stakeholders prior to the application of the regulation and directly attributable to the absence of such regulation are examined as potential benefits.

The cost-benefit analysis was carried out in three stages. Cost bearers and beneficiaries were first identified; exhaustive lists of costs and benefits were then drawn and assigned to cost bearers and beneficiaries, and subsequently the exercise of quantifying costs and benefits was undertaken.

The purpose of this RIA was the quantification of costs to producers was based on results obtained from a survey and from first-hand estimates of costs put forth by experts in food processing and by engineers who conducted field visits to manufacturing facilities.

Other cost categories namely those borne by non-producers include costs to public agencies and costs to business support organizations.

Obviously, the present research study was unable to quantify a broad swath of societal as well as business costs and benefits.

Unquantifiable societal costs and benefits relate to public health and the environment; whereas to producers, impact on product and firm image, demand, and risk of product liability remains hardly quantifiable.

The assessment study relied on five sources of data and information to validate the analysis it set out to accomplish.

These are:

- **Lebanese Customs' statistical data** on trade and on the F&B sector: Often challenged by stakeholders as wanting in accuracy, the research team's unassailable lines of argument are that (i) these are the country's sole official sets of data; (ii) these sets are consistent with national accounts data sets; and (iii) no private-sector source can possibly assume the task of compiling such data or any useful sub-set thereof.
- **Surveys and field visits** proved to be a useful tool to secure information from stakeholders and process it systematically. The resulting 'synthetic' data were used to complement the analysis. Results from previous Executive Opinion Surveys on industry conducted by the CCIA-BML were also helpful.

- **Direct interviews**¹ with ministry officials help clarify a number of issues relating to the regulation under review, the official interpretation of critical clauses and stipulations in the regulation, and most importantly, the official outlook regarding enforcement and penalties.
- **Working Group** meetings and discussions the research team has had with prominent F&B producers were the most valuable source of knowledge of the sector, its current problems and expectations, and its potentials and the challenges it faces. Over a six-month period from end-September 2011 to end-March 2012, producers participating in the Working Group reflected the views of the sector's manufacturing enterprises on ministerial decision 950/1 and reflected on the decision's impact and implications.
- **Ministers official statements** also constituted a basis on which some parameters of the assessment construct were valued.

¹ The research team was unable to secure answers to questions addressed to the laboratory department of the Industrial Research Institute (IRI) despite numerous requests by e-mail and phone calls.

II. THE FOOD AND BEVERAGES SECTOR: POSITION, PROBLEMS AND PROSPECTS

A. The sector's economic weight

The F&B sector in Lebanon is the largest among manufacturing activities. According to the Ministry of Industry's 2007 census "The Lebanese Industrial Sector", the activity comprises the largest number of industrial establishments, with 736 producers accounting for 18.2 percent of total industrial enterprises.

On six counts, the activity is the largest within the industrial sector:

- it employs the largest percentage of the industrial work force (24.9 percent);
- it produces the largest share of industrial output (25.7 percent);
- it accounts for the largest portion of industrial value added (26.9 percent);
- its fixed assets are the industrial sector's largest at 13.9 percent of that sector's total;
- its gross fixed capital formation is the sector's largest at 30.5 percent of the total;
- and its exports account for nine percent of the country's total exports, second only to jewelry exports, which owe their first place solely to their high-value precious-metal content.

1. Products of the food industry

Lebanese food processing enterprises produce a variety of national foods and beverages including traditional products such as alcoholic beverages, confectionery, bakery products, olive oil, pickles, preserves, spices, condiments, and processed and canned fruits and vegetables.

Bakeries represent 48 percent of the F&B sector and comprise 160 establishments, the sweets industry accounts for 22.5 percent and the F&B processing and preservation sub-sector constitute about four percent of the total number of enterprises in the F&B sector.

2. The sector in figures

Input and energy

The F&B sector is the single largest user of raw materials and energy compared with other industrial activities. In 2007 (the year the latest industrial census was carried out), the sector's total spending in 2007 prices on raw materials had added up to \$958.2 million whereas spending on energy had added up to \$110.7 million. In that year, the sector had about \$1.03 million worth of environmental equipment.

Sales and industrial output

The sector is a top ranker in terms of sales, which amounted to \$1,655.5 million, that is 26 percent of total sales in the industrial sector. Total output added up to \$1,748.4 million and constituted also 26 percent of the sector's total output.

Fixed assets

The food and beverages industry owns 30 percent of total assets in the industrial sector, of which 44 percent constitutes machinery, 25.7 percent building and 18 percent land.

Expenditure on salaries and wages

The sector employs more workers than any other manufacturing activity. Some 17,727 fixed and 1,188 seasonal workers are on the payrolls of F&B producers, who incur \$131,632,000 in salaries and wages that is 24 percent of the industrial wage bill and the industrial sector's largest such expenditure.

The F&B sector's workforce includes skilled and unskilled workers. Skilled workers, such as technicians and engineers assume supervisory functions, quality control functions, and responsibilities in analytical and microbiological laboratories and in equipment maintenance. Managerial staff carries out functions in the procurement of raw materials and in marketing on domestic and export markets. The F&B industry also has the highest percentage of home workers.

Production

F&B production is mainly sold on the local market with sales amounting to \$1,655.5 million. Whereas, total exports of the sector amounted to \$411.5 million in 2010 according to customs data. The largest export component of this category is the prepared food- vegetables, fruits and nuts.

The main destinations of the Lebanese agro-food exports are: Syria, Saudi Arabia and Iraq, which bought respectively 16, 15.7 and 7.8 percent of the sector's total exports. Among the top ten export markets, the EU occupies the fourth rank with 7.45 percent of total exports whereas exports to the US make up 5.38 percent of overall exports.

Imports of F&B add up to \$1,300.8 million. Main suppliers include France, The Netherlands, Saudi Arabia and Syria.

3. The sector's competitiveness

To the extent that it relies mainly on local agricultural production for its raw materials, the F&B sector draws some of its comparative advantages from the characteristic strengths of that production.

- Climate diversity, soil fertility, and the abundance of water resources are factors that contribute to the broad variety of quality agricultural produce at the disposal of F&B processing industries.
- Relatively cheap but skilled agricultural labor accounts for comparatively low production costs in some crops.
- Geographical proximity to Arab and EU export markets.

These strengths, however, are outweighed by serious weaknesses that undermine the F&B sector's reliance on local agricultural produce as raw materials for processing.

- High costs of production due to the lack of modern networks of infrastructural facilities, poor water management systems, power supply deficiencies and high energy costs. These costs render local production unable to compete with imported products.
- Lack of mechanization and modern technologies, underdeveloped waste management techniques and inappropriate post-harvest handling of the produce that may cause its deterioration and make it unsuitable for production.

- Most local production is not compliant with international standards and use improper practices such as the excessive use of pesticides and herbicides. These practices affect the quality of production and lead to exports being denied access to US, EU and other export markets.
- Poor public financing or support services such as research and development, extension and advisory services, technical assistance and training programs.
- Difficult access to credit essential for investment aiming to improve the production and competitiveness of Lebanese products.
- The F&B sector has to deal with a commercial challenge to increase its competitiveness in light of the integration of Lebanon into the global economy. Moreover, it has to face the competition from low cost producers, and low cost industries (Syria, Egypt, and Jordan).

B. The sector's problems

It has been increasingly challenging for Lebanese exports to access foreign markets as most countries are applying progressively more stringent standards and specifications on imports.

By enforcing compliance with internationally accepted health and safety standards, ministerial regulation 950/1 would by the same stroke facilitating the access of Lebanese F&B products to export markets.

In an exercise that sought to compare the frequency of instances where exports from Lebanon, Syria, Jordan and Saudi Arabia were denied entry into US markets, it was noted that Lebanese exporters of processed food and beverages were at par with their three Arab competitors as far as type of violations detected by the Food and Drug Administration (FDA).

The last 100 recorded cases where exports were denied access to US markets revealed that violations fell into two broad categories:

- a. Violations that corrupt food safety and quality, such as the presence of unacceptable levels of pesticide residues, toxic levels of bacteria, or the use of unsafe color additives, or products that are plainly described as "filthy".
- b. Violations that are less hazardous to health, but nonetheless cause exports to be denied access, such as labeling, misbranding and administrative infringements.

The prevalent form of violation detected in the food and beverage products of the four Arab countries pertains to technical infringements. Labeling non-conformity occurred most frequently in product detention instances of exports from all four countries. Whereas the more serious violations recorded moderate occurrences that ranged from 24 percent of total violations for Syria's exports to 39 percent for Saudi Arabia's.

In the case of Lebanon's exports, serious violations accounted for 26 percent of total violations detected in the 100 cases that were monitored. Compared to the other three Arab countries, Lebanon's detained exports had the highest occurrence of unsafe color additives and the second highest occurrence of salmonella and of products described as filthy by US customs authorities.

Though the frequency distribution by type of violation is comparable for all four countries, Lebanese exports to US markets scored worse in terms of the time period during which the last 100 cases of consignment detention occurred.

On that count, Jordan and Saudi Arabia ranked best with the last 100 cases of exports being denied access to US markets occurring within a period of nearly seven and a half years. Syria ranked third on that count, with the last 100 cases of detained exports occurring over a five-year period, while for Lebanon the last 100 cases of detained exports occurred over four years that is an average of 25 such cases a year.

III. THE REGULATION

A. Ministry of Agriculture and Ministry of Industry regulation 950/1: provisions and rationale

1. *The regulation*

In January 2011, the MoA and the Mol jointly issued regulation number 950/1 requiring food and beverages manufacturing establishments to register with the Ministry of Agriculture, and subsequently go through an inspection designed to ascertain compliance with health and technical standards. The provisions of the regulation apply to processed food products, be they destined for local or for export markets. Upon assessment visits carried out by MoA inspectors, manufacturing facilities that are found to be compliant with the stipulations of the regulation are assigned a health registration number. That number is not only an attestation of compliance with the provisions of the regulation, but it is also practically a license to export F&B products and/or sell these products on the local market.

The regulation's conditions relate to food safety, pollution control, worker hygiene, and more generally, systematic control over all areas and nexuses in production lines and processes. These conditions are in harmony with international practices and guidelines. As a matter of fact, the text of the regulation mentions congruence with General Manufacturing Practices (GMP) and the "Hazard Analysis and Critical Control Points" (HACCP) and local regulations and standards such as the Lebanese standard number 656 titled "General Food Safety Rules".

2. *Inspection and control*

Factory premises, equipment and infrastructure are to be subjected to inspection and so is the whole production process, including the quality of raw materials and additives used, worker hygiene, packaging, labeling, and storage. Product testing is to be made regularly to determine conformity with national standards and with export market requirements. Environmental safety requirements such as those related to waste management and disposal take part of the conditions that should be met for registration.

The decision states that non-compliant factories are allowed a grace period of three months to carry out the required corrective measures. Compliant factories will be assigned a health registration number, a pre-condition for selling on the local market and for the issuance of health certificates for exports.

Because the issue of food safety has to be addressed expansively and holistically, a comprehensive mapping of all warehouses, slaughterhouses, farms, factories and restaurants will be carried out by the Ministry of Economy and Trade (MoET). The ministry is coordinating efforts with all ministries concerned with food safety. This endeavor will be complemented by a proposed ministerial decree that compels owners of warehouses, especially stocking food products such as meat, dairy produce and all varieties of chilled or frozen food, to obtain licenses in a bid to monitor and control the quality and safety of imported or local food items in warehouses and thwart food safety violations.

3. *Rationale*

Decision number 950/1 addresses critical concerns related to food safety, consumer protection, and the environment. 'Collateral' benefits pertain to easier access to increasingly more demanding export markets.

i. Food safety

There are indications that a spate of highly publicized cases of food poisoning and of spoiled food being marketed domestically may have prodded the MoA to take regulatory initiative to address the issue of food safety. The element of spontaneity that prompted the ministry to intervene through regulatory decision 950/1 may explain the fact that regulatory alternatives were not examined and analysis of the regulation's impact was deemed nonessential.

Consumers, public opinion at large and the judiciary readily attribute food-vectoring poisoning, fatal in some instances, to inadequate supervision and control over the F&B and the catering industries in general. Consequently, regulation 950/1 will inevitably be perceived as a signal to producers and to consumers that locally processed F&B products will henceforth become safer as production facilities will be subjected to recurrent testing and controls.

Also implied in the decision is the more contentious message that this is also an attempt to address the complex issue of food safety, as the draft law on food safety was shelved seemingly indefinitely.

ii. Cleaner production

Another dimension for the regulation's rationale pertains to environmental concerns caused by food processing plants. Overall, the industrial sector in Lebanon contributes to 25 percent of total greenhouse gas emissions².

Information gleaned from the study point to the facts that the food and beverages industry is one of the larger greenhouse gas emitters, and is one of two main emitters of NMVOCs³.

To be sure, air pollution is not the only environmental peril brought about by the F&B industry. As a matter of fact, the activity discharges solid and fluid wastes that degrade both water and soil.

In the industrial sector at large, efforts to contain pollution were found to be wanting. The 2007 industrial census⁴ revealed that value of equipment installed for the protection of the environment represented a paltry 0.1 percent of total fixed assets in the sector, with hardly any recurring net investment in such equipment being made.

The ministerial regulation under review attempts to control and contain the environmental impact of F&B processing by setting conditions on waste management.

iii. The export factor

Easier access to exports markets is another objective of the regulation. Producers that conform to conditions set in the ministerial regulation would by the same stroke be complying with food quality and environmental regulations enforced in export markets. Should the MoA's health certificate gain credence locally and on export markets, it might conceivably facilitate F&B producers' access to these markets and reduce the steep testing costs they are currently bearing, and in some sub-sectors, dispense them from seeking international certification like HACCP or GMP.

2 These emissions totaled 18507 Gg of CO₂ equivalent in 2000, according to a Ministry of Environment study titled "Lebanon's Second National Communication to the United Nations Framework Convention on Climate Change" published in 2011. The study was funded by the Global Environment Facility and was carried out by the United Nations Development Program in Lebanon. In that study, the industrial sector's emissions are subdivided into emissions caused by the combustion of fuel for industrial use and in construction sites, and other sector-specific emissions. The share of the food and beverages industry reflects the latter emissions resulting from industrial process and not those resulting from energy use.

3 Non-Methane Volatile Organic Compounds. Asphalt road paving is the other main emitter of NMVOC.

4 Published in 2011.

4. The decision's legal basis and producers' position

In Lebanon's legal context, ministerial decisions rank quite low on the scale of legal precedence; they are subordinate to laws, which require parliamentary ratification, and lower than regulatory decrees, which are meant to define enforcement procedures and sanctions for violation of ratified laws. On that scale, ministerial decisions have legal precedence over administrative circulars only.

Reflecting the broad prerogatives ascribed to ministers as the highest-ranking executives within the public administration, ministerial decisions carry practically the enforceability of ratified laws and can be challenged by petitioning the State's Consultative Council.

With regard to ministerial decision 950/1, producers in the F&B sector clarified a finely nuanced five-point position.

Consistent with their persistent affirmation that, fundamentally, they are supportive of the ministerial decision subject to certain provisos, producers and their trade association, the Syndicate of Lebanese Food Industrialists (SLFI), have no intention of legally challenging the decision in any class action.

Individual producers, however, remain free to undertake legal action against the decision should they reckon that complying with its stipulations would entail considerable damage to the interests of their enterprises.

Producers do not consent to allowing any ministry or public agency the prerogative to close down a manufacturing facility solely on account of its non-compliance with HACCP or GMP, as long as that facility's final product is safe for human consumption. They base their stance on the fact such prerogative has no legal grounds.

Assigning the final say on closing down a factory to the minister of industry in person does not solve the quandary. Producers realize that through this provision the ministries overseeing the application of decision 950/1 may have sought to send a reassuring signal that they deemed the closure decision to be at a level of gravity that would warrant the personal approval of a minister. But still, producers are disinclined to grant to any minister discretionary powers that should normally be reserved to the judiciary.

Advocating and lobbying for modifications in the ministerial decision are the forms of action that producers intend to undertake.

B. The implementation mechanism

1. The view from the MOA

The checklist

As viewed by the MoA⁵, the stipulations of the ministerial decision are the most basic and general guidelines for food safety. These guidelines are neither too demanding nor entirely new to the F&B industries.

As a matter of fact, the Council of Ministers had in 2004 approved LIBNOR standard no. 656, which had set general guidelines for food safety and which constituted a base for ministerial decision 950/1. In the ministry's opinion, therefore, producers have had ample time to get on the process of compliance and would have been more prepared to comply with the recent ministerial decision.

⁵ Eng. Ms. Mariam Eid expressed the MoA's views on decision 950/1 in a direct interview held in February 2012 with one of the researchers who worked on the present paper.

Though the MoA's checklist for compliance assessment is the same for all producers within the F&B sector, a different weight is assigned to each requirement depending on the sub-sector specifics and on the degree of risk attached to different phases within any given production process.

Assessing compliance

The MoA considers that it is within its prerogatives to supervise F&B industries, food safety being one of the ministry's main concerns. It deems assessing the impact of the ministerial decision on producers to be a responsibility it shares with the MoI and with producers themselves.

Upon filing for registration with the MoA, producers should expect a visit by the ministry's inspectors for a preliminary assessment of their production facilities. Processing operations that are deemed to be non-compliant with the conditions of the regulation are given time to meet those conditions. Depending on extent of modifications that need to be made and the risk factor attached to the firm's product, the period granted for compliance could stretch to the limit of a year.

To further develop assessment procedure, the ministry is currently preparing inspection lists identifying critical and hazardous points that could jeopardize the safety of each type of product.

The inspectors' assessment of the extent of compliance and the relative importance of each requirement thus becomes more objective and less discretionary. Based on that assessment a score is assigned to the inspected firm and a decision emerges as to whether or not it is granted the ministry's health number.

Inspectors are either engineers or technical assistants, and are either members of the MoA staff or working with the ministry on a contractual basis. Training sessions are being provided to the inspectors, with engineers getting higher levels of training than technical assistants. Training is basically technical and includes exposure to HACCP.

The regulation's implied leniency

Though the notion of compliance by stages is not mentioned in the regulation, the minister of agriculture has announced on several occasions that in cases where non-compliance does not jeopardize product safety, the ministry will be more lenient on enforcement deadlines. In such instances, the ministry may carry out periodical checks to ascertain compliance action undertaken.

Only in cases where food safety is flagrantly disregarded that procedure for closing down a firm is initiated.

When deemed compliant, production facilities are granted a health number.

The MoA intends to apply the conditions spelled out in ministerial decision 950/1 to all F&B processing firms including those that do not hold a license from the MoI.

Dealing with critical cases of non-compliance

Regulation 950/1 states that in critical cases, firms may be shut down based on a decision of the Minister of Industry. Such measure, however, is not entirely subjective, as it would require a court decision. In instances where closing down a firm is warranted, the Minister of Industry would have to recommend a temporary closure until public prosecution has conducted further investigations based on which a court decision would be reached.

The MoA may ask the MoET to withdraw a given product from the market and ban its exportation. In such case, the firm would be practically put out of business.

The procedure for closing down a factory for non-compliance with the ministerial decision has not yet been finalized.

In support of F&B industries the ministry is seeking to work out agreements with public-sector laboratories such as Industrial Research Institute (IRI) as well as private laboratories calling for a reduction of testing fees. In addition, the ministry will defend the case for lower customs duties on imports of raw materials and semi-finished products used as inputs in F&B industries, provided such imports do not compete with local production.

On the necessity of compliance to international standards

Through the decision, the stated aim of the MoA is to induce F&B producers to adopt the HACCP approach to assess and address risks embedded in their firm's production process. The ministry does not seek to impose HACCP certification as such on F&B processing firms, but a systematic preventive approach imposed by a growing number of regulatory institutions throughout the world.

From the ministry's perspective, producers have a stake in integrating within the general run of operations costs, the costs of adapting production processes to the exigencies of food safety. This is because the ministry estimates a priori that costs brought about by compliance with the regulation's requisites will be lower than those presently incurred.

A memorandum of understanding is being prepared to coordinate the efforts of the MoA and the Mol on matters pertaining to inspection.

2. The role of the Ministry of Environment (MoE)

The MoE's guidelines for compliance with environmental regulations are among the conditions imposed on factories seeking an industrial license prior to their actual establishment⁶. The MoE therefore supports efforts to regulate the F&B sector and monitor its compliance with technical, health, and environmental requisites. The ministry's involvement in ministerial decision 950/1 relates to instances and situations that could arise where the decision's stipulation may overlap with or contradict some of MoE's requirements.

Infrastructure, waste management and pollution

As a public agency in charge of containing the environmental impact of the industrial sector, the MoE determines and supervises the implementation of guidelines pertaining to waste management and pollution control. As for infrastructure, the MoE collaborates with other ministries in planning for the laying and upgrading of a waste disposal network that would render possible compliance with a number of regulatory requisites.

Compliance with environmental guidelines

The ministry sets guidelines for the establishment of industrial plants and is a member of the industrial licenses committee that advises the minister of industry on the granting of industrial licenses. Licenses issued by the Mol are conditional upon the licensee meeting MoE requisites. Subsequently, the MoE follows up on producers continued compliance once operations are underway.

The MoE membership in health committees of Lebanese provinces, in the Supreme Council for Urban Planning, and in LIBNOR further confers to it influence in matters relating to environmental norms and regulations applied to production facilities.

⁶ Ms Sanaa Sairawan, Head of Service of Planning and Programs, and Mr. Hassan Hoteit, Head of Department of Urban Environmental Protection expressed the MoE's views on decision 950/1 in written answers to questions prepared by researchers who worked on the present paper.

Prerogatives in cases of non-compliance

Though the industrial license is issued by the MoI, the MoE reserves the right to revoke that license in instances where facilities were built that do not comply with environmental guidelines.

Licensed industrial establishments that are found to have loosened up their compliance to environmental guidelines at later stages are served a preliminary warning for compliance by the MoE. The warning notice specifies a time period for compliance and failure to comply may prompt the MoE to undertake legal action seeking to close down manufacturing plants.

3. Compliance by stages: A CCIA-BML proposal

The CCIA-BML proposed that F&B manufacturers be allowed to comply by stages to internationally established norms and regulations pertaining to products as well as production processes. It is the CCIA-BML's belief that manufacturing enterprises in that sector are currently confronted with costly and demanding compliance with the requisites of GMP, HACCP and ISO, and that this presents challenges that manufacturers can hardly meet over the short term.

As a matter of fact, the Chamber believes that instigating compliance in that sector is a nation-wide task with prerequisites of which involve substantial long-term investments in infrastructure and in the sector's conformity assessment chain.

Within that perspective, the Chamber's twin overriding concerns relate to public health and the environment. Higher productivity, competitiveness, and easier access to export markets are consequential objectives of critical importance to manufacturers.

In concert with the United Nations Industrial Development Organization (UNIDO), the Chamber proposes to establish its own seal or certificate that would be awarded to food processing concerns that have complied with a number of pre-set health and environmental parameters. Though short of the requisites of international standards, these parameters may be deemed as deserving the Chamber's seal of quality on condition the manufacturing concern that met them has made a verifiable commitment to strive for full compliance with international standards.

In this context, producers applying for the Chamber's seal would have to undergo an environmental audit conducted by any of the technical partners in the scheme. Subsequent to the technical assistance these partners may have provided to producers, the Chamber reviews the measures taken in the compliance process, carries out a gap analysis to ascertain what remains to be done, and evaluates producers' commitment toward full compliance. Only then would the Chamber's logo and seal of compliance be granted to the producer.

The Chamber's involvement in the compliance process is intended to make it easier for producers to comply with international standards by stages and hence preparing the grounds for full compliance.

This approach calls for an agreement with institutions from the public and private sectors that are able to assist in:

- Providing the environmental compliance know-how to interested producers among the Chamber's members,
- Providing the Chamber with environmental audit to producers,
- Securing financing where possible to meet compliance costs.

4. Pre-conditions to seamless compliance

Infrastructure and the allocation of industrial zones

To some producers, compliance with critical stipulations of ministerial decision 950/1 is either impossible or would entail forbiddingly high costs due to inadequately built and maintained infrastructure in industrial zones and other locations where their factories are established. Indeed, the cost burden of compliance is unbearable to producers that are located in areas where no industrial waste disposal networks exist or where such networks either have insufficient capacity or suffer from decades of neglect.

Aware of the fact that stop-gap solutions in matters relating to infrastructure would have minute impact on their ability to comply with the stipulations of the ministerial regulation, producers are demanding government intervention in the building of adequate waste disposal infrastructure in new industrial zones. These zones would have to be allotted and developed by the government, rather than by private developers if land prices were to remain affordable for industrial projects.

Addressing the problem of non-registered producers

The MoA has made it clear from the outset that the stipulations of decision 950/1 will apply to all F&B producers irrespective of whether or not they have an industrial license from the Mol. Such resolve is in line with the prime rationale behind the decision namely, food safety. The official argument in this context is that compliance with the ministerial decision is a prerequisite for exporting and for locally marketing F&B products, whereas the set of conditions that have to be met for industrial licensing are mostly administrative and affect only remotely the quality and safety of F&B products.

IV. STAKEHOLDERS

A. An analytical listing of stakeholders

1. Producers and exporters

Producers and exporters of the F&B sector are the direct stakeholders impacted by ministerial decision 950/1. Producers must ensure that their production is compliant to HACCP and GMP in order to be eligible for a health number. This requires all firms to set right all non-compliant areas of their production ranging from premises and infrastructure to production processes and packaging.

2. The Ministry of Public Health (MoPH)

In more aspects than one, the MoPH is directly concerned by ministerial regulation 950/1. Food safety, the prime objective of the regulation under review, is one of the main 'entryways' to public health. The MoPH assumes pivotal responsibilities in instances of pandemic outbreaks of infectious diseases, including those that are food-borne and water-borne, be they triggered locally or introduced through imports. To carry out its duties in disease prevention, control and eradication, the MoPH is granted broad regulatory and procedural prerogatives that could affect imports as well as locally production of suspect items or categories of comestibles.

Also within the MoPH prerogatives are the licensing of, and health control over, water bottling enterprises, as spelled out in decree number 108/83.

The MoPH had in the past issued regulatory circulars numbers 48 and 49 in 1999 requesting that bakeries and mills should maintain cleanliness of work premises, set proper waste and wastewater disposal systems, and provide adequate work place lightening and ventilation. And in decisions somewhat evocative of regulation 950/1, the MoPH also required workers to have health certificates and to use protective equipment in the workplace.

The MoPH has the additional prerogative of intervening in instances of food poisoning, which further confirms its position as a major stakeholder in the implementation of the current joint ministerial regulation 950/1.

As a matter of fact, the MoPH had issued circular number 81 in 2001 by which it set guidelines for food poisoning investigations. In instances of contaminated food products, the circular calls for a MoPH probe of the suspect factory. Such probe would involve checking for compliance with health conditions, checking on the state of health of staff working at the factory, and sample testing products. Should the production process be deemed as the cause of product contamination, the ministry would impose a product recall and the manufacturing facility would be closed down pending verifiable remedial action.

Past attempts by the MoPH to impose controls on the F&B processing industries failed to put in place an enforcement mechanism.

3. The Ministry of Environment

Solid and liquid waste disposal through an adequate sewage network is a key requirement of regulation 950/1 and by the same stroke that requirement set the MoE as a direct stakeholder in the regulatory process being examined.

In line with its responsibilities and prerogatives defined by law 97/667, the MoE set in 2001 national standards

for environmental quality. These specify for all industrial plants general emission limit of air pollutants and define parameters for wastewater discharges and noise pollution.

In a bid to control pollution generated by F&B processing, the MoE issued two ministerial regulatory decisions in the years 2000 and 2001. Decisions numbers 29/1 and 5/1 aimed at setting the general environmental guidelines required for the establishment and operation of dairy products industries and vegetable and fruit preservation industries, respectively. In 2010, the MoE extended its regulatory reach to olive mills, bakeries and roasting industries.

Many of the requirements included in MoE regulatory decisions recur in regulation 950/1. Maintaining cleanliness in working and storing areas, supplying workers with protective gear, setting up adequate ventilation systems, and establishing waste disposal systems are examples of recurring requirements.

Had the legal and institutional framework enabled the MoE to fully enforce compliance with the guidelines it set, manufacturers would have gone a long way in complying with the stipulations of regulation 950/1, as they would have had the time needed for such compliance.

4. *The Ministry of Agriculture*

It was at the behest of the MoA that a regulatory attempt was undertaken that aims at improving the safety of locally processed foods and beverages and reducing the environmental footprint of the food processing industry.

The MoA and the Mol jointly assume the supervision of ministerial decision 950/1.

5. *The Ministry of Industry*

The main objective of the Ministry of Industry is the development of national industries and the promotion of their products. Through its industrial policies, the ministry also seeks to protect local production and promote Lebanese exports.

By issuing decision number 950/1, jointly with the MoA, the Mol ensures that local production of the F&B sector is compliant with international standards which confers it a better access to export markets.

6. *The Ministry of Economy and Trade*

Regulation 950/1's main objective is getting food factories' products to measure up to national and international standards.

At the national level this would directly affect the Consumer Protection Directorate at the MoET. This department states that one of its main goals is to ensure food safety in local markets. It is also evident that with the eventual compliance of the factories, the Directorate's job would be to oversee the final product as it mirrors the whole manufacturing process.

However, the Directorate has a limited number of controllers in the field and its action cannot possibly cover all of the country's retailers and restaurants.

The Directorate currently has only 172 controllers hired on a contractual basis. These controllers are in charge of supervising the quality of food products sold on a national scale. Eleven of them cover the country's southern region, 23 are assigned for the northern region and 105 for the area of Beirut and Mount Lebanon.

7. Government agencies

IRI, established in 1953, is a Lebanese institution for studies, industrial research and scientific testing and analysis. IRI is a not-for-profit institution, linked to the MoI and enjoys administrative and financial autonomy.

The activities and services of the Institute are organized to realize the following aims:

- To provide, on an international scientific level, reliable services in testing and analysis and to grant certificates of quality or conformity with standards and purchase specifications
- To conduct studies and research relevant to the establishment of new industries
- To investigate and disseminate information about available raw materials with a view to defining their use and establishing the best means for their exploitation
- To provide specialized technological, management and economic consulting services to existing industries and industrial development schemes
- To maintain close co-operation with official institutions, industrial organizations, and development boards both on the national and international levels in matters relating to the industrial development of the country

LIBNOR is a public institution attached to the Ministry of Industry. It was established by a law dated 23/7/1962 as the sole authority to issue, publish and amend Lebanese standards and to give the right to use the Lebanese Conformity Mark (NL Mark).

National standards cover all products falling within the agro-food, chemical, construction, mechanical, electro-technical and electromechanical sectors.

LIBNOR also provides both the private and public sectors with technical consultations, training courses and seminars on Standardization, Quality Control and other subjects such as Food Hygiene, HACCP, GMP, and hence can offer direct support during the compliance process of F&B producers.

LIBNOR has issued more than 1673 standards until December 2008. Most of them are adopted from international, European and regional standards.

8. Laboratories

Labs constitute indirect stakeholders that are impacted by the decision. Producers need to test their products with labs (private or government labs) in order to know whether or not they are compliant prior to the inspection of the MoA. These labs must therefore ensure that they have all necessary equipment and tests for compliance. This process might also call for staff training to put into service the new testing requirements.

9. Academic institutions

Teaching, research, laboratory and testing services, and outreach programs destined to the sector, are the main contributions that academic institutions are best at providing.

Professionals in food science and technology, agronomists, agricultural and food engineers, and agri-business specialists are what the F&B processing industries need to address the challenges of innovation, competitiveness and compliance they are currently facing.

In research and development, microbiological research focused on the detection of food-borne pathogens would be of critical importance to the F&B industries. And so would R&D on technologies to process, store and package toxin-free food and beverages. Valuable applied research could also examine the environmental impact of food processing and recommend sector-specific environmental management systems.

Extensive practical training courses could also be designed in partnership with industry representatives, with the objective of promoting expertise in international standards and food safety systems. Whereas short training sessions could aim at upgrading the skills of existing workforce.

In Lebanon few universities have specialized programs offering degrees related to food science and safety. The American University of Beirut (AUB) offers undergraduate and postgraduate degrees in food science and management, agribusiness, and agricultural engineering. The Lebanese University (LU) offers degrees in food science and technology and agricultural engineering, whereas Saint-Joseph University (USJ) offers graduate degrees in Mediterranean agricultural and agro-food engineering.

Some of these institutions have strong research interests and undertake outreach activities in support of food industries. The Faculty of Agriculture and Food Sciences at AUB has partnered with the Lebanese government, UNIDO and other non-governmental organizations to establish a draft for a comprehensive food safety law and was also a member of the committee to develop national Codex Alimentarius Standards. The Faculty also holds workshops to train quality control managers and food service personnel.

To further strengthen industry-academia collaboration as the prime vehicle for the transfer of knowledge to F&B producers, the USJ graduate programs in agro-food engineering and engineering of Mediterranean agriculture, in collaboration with AUB, have launched the project "Agripole, the agro-technology business of the Bekaa". Agripole is a Business Development Center and a business incubator, with the mission to help create and develop competitive Lebanese enterprises in the agricultural and food sector. The services provided by this Center include strategic planning, corporate management, and training in quality control systems and standards, along with training in business strategy and marketing. In addition to these services, Agripole allows young entrepreneurs to start their own business with the least possible cost (rent, operating expenses and personnel costs) while providing them with the needed financial, legal, commercial and technical expertise.

10. Trade associations

SLFI defines its core mission as one of seeking to develop the agro-food industrial sector in Lebanon. Striving to improve the quality and competitiveness of products of the F&B industry also lies within the scope of the syndicate's core mission.

The SLFI has forthrightly reflected the standpoint of F&B industrialists on ministerial regulation 950/1 and has actively participated in all five Working Group meetings and all four Working Committee meetings that were held in the seven-month period September 2011-March 2012.

The Association of Lebanese Industrialists (ALI) represents all industrialists in Lebanon and seeks to defend their interests. The association has been both initiator of, and active participants in, endeavors designed to modernize industrial activity, attract investments to the sector, promote industrial exports, improve product quality, and strengthen all links in the conformity assessment chain.

As such, the SLFI and the ALI represent the prime stakeholders affected by the ministerial decision under review. Both associations have to dedicate more effort and resources to put forth means and alternatives that would minimize their members' costs of compliance with the ministerial decision.

11. Consumers

There were 483 recognized cases of food poisoning in 2010, according to data compiled by the MoPH ⁷.

Irrespective of the reliability of official data on cases of food poisoning, consumer perception is that due to deficient control and supervision, exposure to unsafe, unhygienic or adulterated food remains a lurking and hardly avoidable risk.

The absence of a law on food safety⁸, overlapping ministerial mandates and prerogatives, and judicial sluggishness are factors that combine to exacerbate consumer perception of vulnerability.

If thoroughly implemented, MoA decision 950/1 would signal to consumers that the F&B industry is subjected to adequate supervision and controls on product safety and quality. This would contribute to building consumer confidence in locally processed food and beverages.

Restaurants and catering enterprises would likewise hold the same perception that serious supervision and control would eventually put at their disposal safer and better locally processed food and beverages.

12. Farmers

Farmers are expected to be affected by MoA decision 950/1 to the extent that local agricultural produce constitutes a portion of inputs used by the F&B processing industries. The larger that portion is, the more far-reaching the impact of the ministerial decision under review as F&B producers would seek to streamline the quality control systems by, among other things, demanding better quality agricultural produce.

To farmers, the quality chain involves a series of links that starts with seed and fertilizer quality and the rationed use of suitable pesticides, goes through the phases of post-harvest handling and storage, and ends with delivery to producers.

Each link in that chain requires significant investment outlays that can hardly be financed through subsistence farming.

Limited as its resources may be, the agricultural sector witness a surge in imports of agricultural machinery in 2011.

The sector's development, however, remains contingent upon more public expenditure being allocated to road, power and irrigation infrastructure in addition to the provision of technical and scientific support from international organizations and universities.

The MoA signed in 2011 a financial agreement with the European Union to launch the second phase of the Agricultural and Rural Development Project (ARDP). The €14 million program will be implemented over four years and aims at enhancing the performance of the agricultural sector through strengthening the institutional and organizational capacity of MoA, improving access to credit to support rural development activities, and developing agricultural infrastructure to promote sustainable water and land management.

⁷ A note of caution on MoPH numbers on food poisoning. These numbers could err on the downside as not all cases of food poisoning are reported, either because they do not involve hospitalization, or because they are not distinctly identified as such. And certainly, not all cases of food poisoning are attributable to products of the local F&B industry. Food handling and storage in homes, by catering enterprises, restaurants and other public places could also be behind an unknown portion of cases of poisoning, and so could be uncontrolled imports and the products of shanty 'producers'.

⁸ A draft of a law on food safety has been submitted to Parliament in 2006, but has not yet been ratified.

In parallel, MoA is currently financing a LL50 billion project that aims at upgrading the quality of packaging, refrigeration and transportation of Lebanese agricultural exports.

13. International organizations

Food and Agriculture Organization (FAO) is the main United Nations agency dealing with all aspects of food quality and safety and in all the different stages of food production: harvest, storage, transport, processing and distribution. FAO and especially the Food Quality and Standards Service (AGNS) adopts the food chain approach in managing food safety and quality, thus involving all actors in the food production chain in the responsibility of supplying food that is safe and healthy.

In Lebanon, FAO has set the priority of promoting sustainable development of the agricultural sector.

One of FAO's projects in Lebanon consists of improving the production of good quality and safe agricultural products and upgrading institutional and operational capacities for managing food safety and quality systems.

At the regulatory and institutional level, FAO action seeks to improve regulatory systems for agricultural inputs at the level of MoA as well as strengthening the Ministry's inspection and quality control capacities, updating standards and technical regulations pertaining to food safety, developing national programs for monitoring contaminants and residues, and upgrading laboratory capacities.

UNIDO launched, in Lebanon and the Arab region, several integrated programs that focus on sustainable development achieved mainly through the modernization of industries and the upgrading of agro-industrial sectors.

UNIDO lends support to Lebanese industries through projects promoting food safety, market access and compliance and regulatory and institutional reforms.

The project titled "Market Access and Compliance for Lebanese Exports" (MACLE) launched in 2007 proved beneficial to Lebanese industrial products, especially products of the F&B industries. The project focused on labeling and packaging.

World Health Organization (WHO) is the directing and coordinating authority for health within the United Nations. It is in charge for providing leadership on global health matters, setting norms and standards, proposing evidence-based policy options, providing technical support to countries and monitoring and assessing health trends. The Department of Food Safety and Zoonoses (FOS) at the WHO focuses on developing strategies to prevent and control food-related risks, coordinating efforts for surveillance and detection of food-related epidemics, providing technical support to member countries for building sustainable capacity and setting international standards and promoting their implementation.

World Trade Organization (WTO) Lebanon has applied for accession to WTO in 1999 and it has been actively seeking accession since. Some of the reforms that are still needed for joining the WTO involve monitoring the compliance with international norms and standards and also with sanitary regulations. This is why the compliance of Lebanese food industries with regulation 950/1 which imposes conditions throughout all processing stages ensures the production of good quality, safe and hygienic food items that are more likely to abide by international standards and norms hence satisfying some of the restrictions hindering Lebanon accession to WTO.

B. A descriptive overview of cost bearers and beneficiaries

1. Cost bearers

i. Direct cost bearers:

Manufacturing enterprises in the F&B sector are the primary cost bearers, be they registered with the Mol or not. To comply with ministerial decision 950/1, these enterprises have to sustain costs that are far from being uniform in magnitude. These costs range from dauntingly high to the minor.

Excessively costly relocation may be the only solution in instances where inadequate or nonexistent sewage and waste disposal network renders impossible compliance with certain conditions of the ministerial decision. On a slightly lower rung of the cost scale are instances where compliance necessitates that the premises undergo major engineering works. Lesser modifications in the structure of the premises or changes in the production line(s) setup may give rise to moderate costs.

Producers may also have to budget outlays for advisory and staff training services, in addition to expenditure on workers' health care.

The regulatory entities in charge of overseeing the implementation of the ministerial decision namely, the Mol and the MoA in particular, have to fund the training of inspectors prior to the implementation of the decision. Subsequently, and for as long as the decision applies, the MoA will have to retain inspectors who would conduct periodic assessments of manufacturers' continued compliance with the decision's requirements.

To these costs should be added supervision and administration costs shouldered by the MoA.

ii. Indirect cost bearers:

The State budget: Lower public revenues

To the extent that compliance with the obligations of the ministerial decision is expected to reduce producers' net profit, or in extreme cases where compliance is impossible or too costly to be contemplated and would hence lead to the closure of production facilities, the government could expect a reduction in corporate tax revenues.

Reduced tax revenues could also result from the government's assent to producer demands for a limited tax exemption to allow them to finance the costs attached to compliance.

A reduction in employment due to layoffs resulting from closure of production facilities would further reduce tax revenues.

Lower imports of raw materials due to reduced production will also negatively affect public revenues through lower customs revenues.

Public investment in upgrading testing capacity

Inaccurate and often unreliable testing of F&B products hampers the ability of Lebanese production to access export markets. Local labs issue certification of compliance to exporters which are not accepted in export destinations. The need for investment in the upgrading of lab facilities and equipment is therefore pressing.

Local raw material producers are key actors in the food and beverage supply chain. They are thus indirectly affected by the implementation of the ministerial decision as these inputs are major determinants in the quality of final products. As per the regulation, manufacturers bear the responsibility of testing all unprocessed supplies and verifying their quality and safety before integrating them in the production process. Consequently, these producers need to allocate outlays for the production raw materials and agricultural produce that are in conformity with food safety norms and standards, if they are to maintain their market share and ward off substitution favoring higher quality imports.

Consumers may be viewed as indirect cost bearers through loss of purchasing power in so far as producers are able to reflect part or all of added production costs in higher prices.

Increased unemployment following the shut-down of noncompliant factories further reduces household purchasing power.

iii. Induced cost bearers:

Business support organizations are the main induced cost bearers as they are expected to dedicate resources to support F&B manufacturing enterprises. The CCIA-BML is expected to assume the larger part of such costs as it will have to allocate financial and human resources in preparation for a sustained lobbying and advocacy effort in support of an important sub-sector of manufacturing.

Another induced cost bearer is *the government* following the implementation of tax exemptions on producers and of subsidies on imported raw materials provided these do not compete with local production. These incentives would reflect in reduced government revenues and hence form an additional cost to the public sector.

2. Beneficiaries

i. Direct beneficiaries:

F&B producers are also the main beneficiaries from the application of regulation 950/1 to the extent that:

- The improved safety and quality of their products, and improved public image of producers would contribute to increased demand for F&B products both on the local and export markets.
- Safer products obviously reduce food poisoning risks and resultant producer liability.
- Over the long term compliance with the regulation would help reduce operating costs, as it requires a more systematic management of production processes, which reduces waste in energy and raw materials.
- Also over the long term producers could aim at building up brand value and goodwill.

Also among direct beneficiaries are *consumers* who will benefit from the increased food safety through healthier and better quality food and beverages and through reduced health hazards and concerns.

ii. Indirect beneficiaries:

The joint efforts of the Ministry of Agriculture and the Ministry of Industry to enforce and monitor health and

technical inspection of F&B enterprises should create a *favorable public perception of the government and decision-makers*. The public's current perception of the public administration is that it is bureaucratic, inefficient, and operating at near-zero productivity. Controls on quality are perceived to be ineffectual either due to insufficient human resources or due to the absence of comprehensive enforcement mechanisms.

The retail, hospitality, and catering sectors would stand to benefit from the application of ministerial decision 950/1, as improved local product image would impact positively their turnover.

A cleaner environment and fewer public health hazards are among the expected societal benefits of the ministerial regulation's bid to mitigate air, water, and soil degradation caused by manufacturing firms.

C. The no regulation baseline⁹

Though the F&B sub-sector is the industrial sector's largest as well as the import-substituting manufacturing activity, trade exchange in F&B has been generating a large and growing trade deficit in the past few years.

In 2011, Lebanon's imports of F&B, excluding water and all alcoholic beverages, have exceeded F&B exports by more than a billion dollars as the trade deficit in F&B widened by more than 70 percent over the past four years. This deficit constituted 5.55 percent of the national trade deficit in 2008 and widened to attain 6.7 percent in 2011. Import coverage, which had risen to slightly higher than 30 percent in 2008, fell back to less than 28 percent three years later.

The trend for diminishing import coverage in F&B trade has mirrored the national import coverage trend, though the F&B coverage ratio has been consistently higher than the national ratio. The difference was broadest in 2008 at nearly nine percentage points and narrowest in 2007 at five percentage points.

Trade deficit in the F&B sector

(excluding water and all alcoholic beverages)

Year	Imports		Exports		Trade deficit	Change in trade deficit	F&B import coverage (exports/imports)	National import coverage
	In thousand \$	In tons	In thousand \$	In tons				
2007	879,965	533,906	253,782	436,795	-626,183		28.84%	23.83%
2008	1,006,416	512,232	303,429	468,944	-702,987	12.3 %	30.15%	21.55%
2009	1,101,003	589,292	318,751	464,013	-782,252	11.3%	28.95%	21.45%
2010	1,278,692	646,577	372,717	506,228	-905,975	15.8%	29.15%	23.68%
2011	1,476,163	651,552	410,820	477,145	-1,065,343	17.6%	27.83%	21.16%

F&B sub-sectors

For the purpose of the study, data pertaining to 13 sub-categories of F&B were reviewed. Alcoholic beverages and water were excluded, as the regulation does not apply to either.

Of the 13 F&B sub-sectors, 12 have persistently posted a trade deficit. In 2011, five of these sub-sectors

⁹ All figures are in current dollars

accounted for nearly 80 percent of the overall F&B deficit. These were dairy produce, with a deficit of 27.26 percent, preparations of cereal and flour (13.83 percent), animal or vegetable fats or oils (14.28 percent), miscellaneous edible preparations (10.92 percent) and sugars and sugar confectionery (13.65 percent).

Only one F&B sub-sector namely, the fruits and vegetables sub-sector (HS 20) has been registering trade surpluses over the past five years. Taken in dollar terms, the value of the sector's exports grew by 75 percent in that period, whereas its imports grew by nearly 48 percent. However, taken in weight, exports have diminished by 8.5 percent in the period under review whereas imports have increased by 19 percent.

Trade surplus of HS 20

HS 20: Preparations of vegetables, fruit, nuts or other parts of plants	Imports		Exports		Trade surplus
	Thousand \$	Tons	Thousand \$	Tons	Thousand \$
2007	50,577	43,677	67,479	55,455	16,902
2008	56,631	43,422	86,054	55,223	29,423
2009	55,809	43,811	89,644	53,835	33,835
2010	62,415	48,301	96,702	58,058	34,287
2011	74,725	51,986	118,001	50,720	43,276

Trading blocs

The European Union is Lebanon's largest supplier of F&B, with imports from the 27-nation bloc accounting for 37 percent of total F&B imports in 2011. Lebanon's F&B exports to the EU constituted 6.7 percent of the country's total F&B exports. In 2008, the value of Lebanon's exports to the EU increased by 23.24 percent.

Arab countries are Lebanon's largest export markets with about 70 percent of the country's F&B exports going to those markets over the past five years. Fluctuations in the value of exports to these markets implies that even though these are the country's largest export markets, they are also the least predictable. Upheavals in a number of Arab countries are expected to impede Lebanon's export growth potential.

The trade deficit with North American markets has been widening over the past five years. Not only has the value of imported goods gone up, but that of exports has decreased as well. In 2007, exports to the United States, Canada and Mexico represented 11.53 percent of total F&B exports. This share dwindled continuously reaching 7.86 percent as of 2011. Violations of product specifications and safety requirements and the consequent detention of Lebanese exports at points of entry to these markets, is the most plausible reason for this decline.

Competitiveness

Trade numbers reflect a gradual erosion of the F&B relative competitiveness and growing difficulties in exporting.

In the absence of local regulation on product quality and compliance to internationally accepted specifications, the tendency is for Lebanon's F&B activity to keep on losing position on export markets. For the same reason, the relative competitiveness of imported F&B products on the local market means that substitution would favor imports

over local production.

The sector's vulnerability was revealed in the period from mid-2007 to mid-2008 when a 37 percent spike in the international price index for F&B undermined the sector's competitiveness to the extent that production relies mostly on imported raw materials and semi-finished goods.

Export markets growing more protective and demanding

More of Lebanon's export markets are imposing stringent conditions relating to food product safety. In the EU, a Rapid Alert System for Food and Feed (RASFF) was put in place to facilitate the exchange information about products that put public health at risk and about measures that have been taken or are to be implemented to respond to these risks such as withholding, destroying or rejecting products. This system informs authorities throughout the EU whenever food and feed items, judged non-compliant with EU food and safety standards are detected on EU markets or at the borders.

Accordingly, information about Lebanese F&B products that are denied access into one European country due to lack of conformity with the enforced specifications, is disseminated to all member states thus leading to these products being rejected in the 27 EU countries.

V. ESTIMATING COMPLIANCE COSTS: SURVEY AND FIELD VISITS

A. The survey

1. Objectives

The main objective of the survey is three-pronged: to reach a meaningful estimate of the magnitude of compliance costs to manufacturers, to find out manufacturers' expectations as to the potential benefits to be derived from compliance and to reveal their ability and intention to shift compliance costs onto consumers.

The processing of responses to the survey was done on an exploratory basis: there was no a priori intention to test the veracity of any particular hypothesis regarding any line of causation that might link one variable to another. However, correlations between variable pairs are expectedly bound to emerge from the one-tailed Pearson correlation analysis carried out by the statistical software used for the exercise.

Particular attention was therefore devoted to noting down correlations between compliance costs, which may be viewed as a dependent variable, and one or more size-indicator independent variables such as labor force, operating surface of premises, production scale, and number of production lines.

Date of establishment is an additional independent variable that was presumed to be impacting the cost of compliance. In older establishments, compliance may be expected to be relatively costlier for those manufacturing concerns that had in the past carried out disorderly expansion and modifications to their premises.

Responses to the questionnaire also sought to find out whether producers already abiding by the requisites of recognized standards might incur comparatively lower compliance costs than others.

2. The questionnaire

The survey's questionnaire is hence subdivided into three core sections. In a section on costs, respondents are asked to evaluate the cost burden that each of 15 compliance requirement categories is expected to have. The five-point scale for such evaluation includes an extreme alternative that expresses instances where costs are deemed to be impossible to bear because they entail unaffordable re-location of premises; a second alternative where costs are expected to be excessive, amounting to more than 80 percent the value of annual production and requiring substantial borrowing; a third alternative where costs are expected to be excessive as they would require outlays of 50 to 80 percent the value of annual production; a fourth where costs are expected to be high at 20 to 50 percent the value of annual production; and a fifth option where costs are anticipated to be moderate at less than 20 percent annual production.

On the same 15 compliance requirement categories, respondents are asked to express their expectations regarding the period over which compliance costs would stretch. The scale of alternative answers ranges from compliance requirements the costs of which are expected to be incurred over less than one year to requirements where costs are expected to spread over more than five years.

The section on benefits seeks answers on a five-point agreement scale on expectations pertaining to access to export markets; local sales; risk of liability; reduced costs; labor productivity; quality products; efficient production; overall productivity; and competition with imports.

The third core section is intended to determine, on a five-point agreement scale, manufacturers' views on their market position and that of their competitors, and their expectations as to the impact of compliance on relative market position and on product prices.

3. *Expected results*

The questionnaire was sent out to some 300 potential respondents from the food processing and beverages sector of manufacturing industries. The aim was to secure responses from 45 manufacturers.

Noteworthy in this regard is the fact that none of the manufacturers contacted in the course of conducting a pilot test of the questionnaire knew about the regulation. The text of the regulation under review had therefore to be sent, along with the questionnaire, to prospective respondents some of whom called back seeking clarifications on the regulation.

The critical implication of that fact is that respondents are unlikely to have conducted any thorough assessment of the cost of meeting the 15 compliance categories – or any significant subset thereof – listed in the questionnaire.

Therefore, producers are more likely to come up with simple estimations of costs based mostly on subjective perceptions of the violations and/or noncompliant areas, processes and practices that need to be addressed. Being closer to rough reckonings, these estimates of compliance costs could reasonably be expected to err on one side or the other of the more accurate cost magnitude.

4. *Survey results of the CCIA-BML sample*

a) *Costs of compliance as perceived by F&B producers:*

Location and infrastructure

According to 58 percent of producers, the cost of rendering location and infrastructure adequate to the requirements of the decision is moderate and would amount to less than 20 percent of their annual production.

To 16 percent of respondents this cost is viewed as high and is estimated to form 20 to 50 percent of annual production.

Nine percent of food and beverages producers thought that rendering location and infrastructure adequate is impossible and would hence be forced to relocate their factories.

Outlays on this cost item are expected to take place within a one-year period as perceived by 47 percent of producers. An additional 25 percent of respondents viewed that the time frame of cost outlays will be between one to three years and 13 percent expected that costs will be incurred over more than five years.

Premises

Around 70 percent of respondents answered that costs of rendering premises compliant with quality standards required by the decision are moderate; costing less than 20 percent of annual production.

These costs were viewed as high by 20 percent of producers and a mere two percent considered them excessive as they would cost them more than 80 percent of their annual production.

Spending on premises' compliance will be incurred by a maximum of one year according to 64 percent of participants. Whereas 20 percent estimated that these costs would take one to three years to meet the

requirements of decision 950/1. Only seven percent stated that outlays on this cost item would take more than five years.

Equipment

Investing in equipment and machinery to match the conditions of the decision is expected to cost less than 20 percent of annual production as expressed by 64 percent of producers. An additional 27 percent viewed that this investment has a high cost estimated at up to 50 percent of annual production. A mere two percent stated that this cost is excessive (more than 80 percent of annual production) and another two percent are not able to comply with this requirement and have to relocate.

Around 67 percent of producers will incur costs on investing in equipment over one year, 24 percent estimated a time frame of one to three years and a remaining 7 percent will need more than five years to meet the obligations of the decision with respect to this factor.

Water supply

Setting up a clean water supply is anticipated to have a moderate cost (less than 20 percent of annual production) by 87 percent of producers. This cost is viewed as high by 11 percent and as excessive by only two percent of participants.

The adequate water supply requirement is expected to be fulfilled by no more than a one-year period by the majority of producers (82 percent). Another 13 percent estimated that it needs between one to three years and the rest were of the opinion that it would take more than five years.

Waste management

Cost of managing waste as stipulated by required standards, is previewed to be moderate by a high percentage of producers (87 percent). Only 11 and two percent, respectively, answered that this cost is high and excessive.

Putting in place appropriate waste management procedures will require spending over one year estimated 73 percent of producers, 20 percent expected that they would need one to three years and seven percent will incur costs over more than five years.

Human resources

The costs of maintaining quality standards pertaining to workers' hygiene, health certificates and ensuring a safe working environment are perceived as moderate by 82 percent of respondent producers. The rest had a mixed opinion as to the magnitude of this cost: 13 percent thought it is a high cost, two percent stated that it is excessive and requires substantial borrowing and the last two percent viewed that meeting this safety and hygiene requirement is impossible due to inherent infrastructural deficiencies.

Outlays are expected to be incurred over no more than one year to fulfill this requirement according to 82 percent of producers. Another 11 percent stated this adjustment is more likely to spread over one to two years and a mere four percent argued that it would necessitate more than five years.

Raw materials

Ensuring raw materials' compliance with quality standards would cost 71 percent of producers less than 20 percent their annual production; a cost perceived as moderate. However, on the opposing view, 20 percent considered this cost as high and nine percent as excessive, amounting to more than 80 percent of annual production.

Costs incurred to make sure raw materials, additives and other input conform with the requisites of compliance are expected to be stretched over less than one year by 71 percent of respondents. On the other extreme, 11 percent assumed that these costs will be incurred over more than five years.

Production

Implementing a proper production process and setting guidelines for it constitute one of the major areas impacted by the decision in that it touches on the core activity of companies that now need to amend their production processes they have been using for years. Contrary to common expectations, this cost is considered as moderate by a high number of producers (78 percent), whereas 13 percent viewed it as high and seven percent as excessive.

Worth mentioning is the fact that this cost item got the lowest percentage of producers (58 percent) answering that the time frame of outlays is within a one-year period.

Costs are expected to be incurred over one to two years by 29 percent of participants and over more than five years by nine percent.

Traceability

Putting in place traceability systems that would track inputs and final products is an essential requirement to monitor and control quality in a sustainable manner. Producers stating that costs of implementing such systems are moderate formed 78 percent of total respondents. On the opposing view, 16 percent viewed this cost as high and seven percent as excessive.

As to the period of cost outlays, 62 percent stated that it will be up to one year, 24 percent said it's going to be between one to three years, nine percent thought it will take from three to five years and the remaining answered that it will stretch over more than five years.

Packaging

A proper package and packaging material are also among the pre-requisite of compliance; and in many instances, products are denied access to export markets solely due to inappropriate packaging or labeling of the product. Setting up a good packaging procedure is expected to cost less than 20 percent of annual production of 80 percent of producers. The remaining respondents had a divergent opinion; 17 percent viewed this cost as high and two percent as excessive.

Costs of implementing adequate packaging procedures are expected to be incurred over no more than a year according to 78 percent of industrialists, over one to three years for 18 percent and over more than three years by four percent.

Testing

Testing costs of raw materials and of final products constitutes a burden to most of the producers according to representatives of the F&B sector that were part of the RIA working group. The survey reveals that 76 percent of respondents consider testing costs as moderate, 20 percent as high and the remaining four percent think it is excessive.

Costs of introducing new testing practices will be incurred over a maximum of one year as viewed by 78 percent of respondents. Thirteen percent thought it will take between one and three years and nine percent needed more than five years.

Warehousing

Food and beverages products are sensitive products that can cause instantaneous and serious hazards on consumers and should hence be dealt with cautiously in all stages of the supply chain. These products need to be adequately stored before distribution to retailers and end customers.

To 80 percent of producers, setting up proper warehousing facilities has a moderate cost. These costs were considered as high and excessive by the same percentage of respondents (nine percent) and two percent stated that they need to relocate their warehousing premises due to the impossibility of rendering them compliant with required standards.

Transportation

Proper transportation is expected to cost less than 20 percent of annual production for 80 of producers, between 20 and 50 percent for 13 percent of respondents and between 50 and 80 percent for four percent of participants.

Nearly 76 percent of the sample answered that spending on transportation will stretch over less than a year, 18 percent affirmed that it will take an outlay period between one and three years and two percent said it is going to take more than five years.

Management

Producers need to ensure sustainability of compliance to quality standards; this would necessitate an ongoing control and monitoring of overall processes in factories. Managing compliance becomes therefore an inherent part of the firm's daily activity to which recurring costs are attached.

Producers that viewed this management cost as moderate formed 76 percent of total respondents whereas those who thought this cost is high amounted to 13 percent and only two percent expected this cost to be excessive and to require substantial borrowing.

Costs of adopting an adequate management system are expected to be incurred over less than a year by 64 percent of producers, 22 were of the opinion that outlays will take place during a period of one to three years and the remaining respondents required a period of more than three years.

Training

Training of workers on new quality systems in line with HACCP and GMP will cost less 20 percent of annual production as perceived by 80 percent of producers. Nine percent estimated that this cost will be high and only two percent thought it was excessive.

Firms' budget allocated for training will be spent over less than one year according to 71 percent of producers, 18 percent will spend it over one to three years and four percent over more than five years.

b) Benefits from compliance as perceived by F&B producers:

Most respondents expected compliance with ministerial decision 950/1 to lead to easier *access to export markets*. When asked to express their views on the issue by responding according to a five-point agreement scale, 38 percent of participants in the survey said they strongly agreed with the statement that one of the benefits of compliance with the ministerial decision is that it facilitates access to export markets. Respondents who said they agreed with the statement represented 27 percent of total participants in the survey. Only 11 percent of respondents answered by saying they either disagreed or strongly disagreed with the statement.

Forty percent of respondents said they agreed with the statement that compliance with the ministerial decision under review will improve their *sales on the local market*, and 16 percent said they strongly agreed with that statement. Of the remaining respondents, 22 percent expressed neutrality toward that statement and a similar percent either disagreed or strongly disagreed with the statement.

Similar results were obtained in processing answers to a close corollary of the premise of improved local sales, as 27 percent of producers strongly agreed with the statement that compliance with the ministerial decision improved their *ability to compete with imports* and the same percentage of respondents agreed with the statement. A third of respondents said they were neutral on the issue and the remainder either strongly disagreed or disagreed with the statement.

An overwhelming majority of respondents either agreed (44 percent) or strongly agreed (40 percent) with the statement that one of the expected advantages of complying with the ministerial decision was a *reduced risk of liability through improved hygiene and health standards* that may arise from the sale of unsafe food products. Respondents' opinion on the issue was quite strong as none said they strongly disagreed with the statement and only four percent expressed disagreement, whereas the rest were neutral.

Nearly half of F&B producers who took part in the survey said they agreed (27 percent) or strongly agreed (22 percent) to the expectation that compliance with the ministerial decision in question would result in *reduced costs due to a better control over inputs and a reduction of defective products* being turned out in their factories. Twenty seven said they were neutral in this regard, whereas a quarter of respondents either disagreed (16 percent) or strongly disagreed (nine percent) with that premise.

A close corollary of the issue of less defective products was expressed in the question as to whether respondents thought compliance with the ministerial decision led to better quality products. Answers to this question were more trenchant as nearly three quarters of respondents either strongly agreed (40 percent) or agreed (33 percent) with the statement. Sixteen percent said they were neutral and eleven percent disagreed. None said they strongly disagreed.

To nearly two thirds of respondents, compliance with the ministerial decision is expected to *improve labor productivity* through a healthier and more efficient workforce and less work accidents, a thirty eight percent of F&B producers participating in the survey agreed with that expectation and 27 percent strongly agreed with it. Twenty two percent said they were neutral in that regard and 13 percent said they disagreed. None of the respondents strongly disagreed with the statement.

According to 31 percent of producers responding to the survey's questionnaire, compliance with the

ministerial decision is expected to render the production process more efficient and less wasteful. Those who strongly agreed with that assertion represented 27 percent of total respondents. Only two percent of respondents strongly disagreed with the statement on efficiency and 18 percent disagreed with it, whereas 22 percent said they were neutral regarding the issue.

Compliance with the regulation under review is expected to increase overall productivity according to 55 percent of respondents: 42 percent of those agreed with the statement and 13 percent strongly agreed with it. Twenty two percent expressed neutrality on the issue, whereas 16 percent disagreed and 4 percent strongly disagreed.

C) The impact of compliance on competitiveness

Another five-point Likert-type scale was adopted in the questionnaire in order to detect nuance in the expectations of producers regarding the impact of compliance with ministerial decision 950/1 on product prices and competitive position.

A significant 49 percent of respondents said they expected compliance costs to lead to higher market prices for their products, whereas 36 percent said that these costs will probably be reflected in higher-priced products. Seven percent of respondents said they were unsure about that line of causation and an equal proportion of survey participants either said prices will probably not rise (two percent) or were sure that prices will not rise (five percent).

Producers had equally clear expectations regarding the impact of compliance costs on the product prices of their competitors. Thus, 40 percent of respondents answered with a clear 'yes' to that question, meaning that they definitely expected their competitors to raise their product prices in response to compliance costs incurred. A third of respondents were less adamant and said compliance costs would probably induce competitors to raise their product prices.

Eighteen percent of F&B producers who took part in the survey were not sure about compliance costs prompting competitors to raise their product prices, whereas the answers to that question of the remaining nine percent of respondents were equally split between a clear-cut 'no' or a more toned down 'probably not'.

A significant 36 percent of producers expected that the market position of their company will improve after compliance with decision 950/1, 29 percent stated that this will probably be the case. On the neutral, midpoint of the scale, 22 percent were not sure whether or not their market position will improve following compliance. Opponents of this view formed only 13 percent of respondents and were split between nine percent answering that compliance will probably not improve their market position, and four percent affirming that they will not gain more market share subsequent of their compliance.

Asked about their expectations regarding the change in the market position of their competitors following compliance with the ministerial decision under review, participants in the survey who were positive about their competitors' position improving due to compliance constituted 36 percent of the total. Twenty nine percent of respondents said their competitors' position would probably improve on account of compliance and 22 percent were not sure about that outcome. Eleven percent of respondents said competitors would probably not improve their market position by complying with the regulation, whereas only two percent were surer that compliance would bring no better market position to their competitors.

Judging from answers to a question intended to reveal the perception of participants in the survey regarding the benefits and costs of compliance within their own companies, producers seem to lean toward expecting benefits to exceed costs. Twenty two percent of respondents were positive that such was the case and the same proportion of respondents said that this was probably the case. A significant fraction of respondents, 31 percent, said they were

not sure whether the benefits to be derived from compliance surpassed consequent costs, whereas 13 percent deemed it improbable that benefits would exceed costs and eleven percent expressed a more resolute opinion that benefits will not exceed costs.

A close question pertaining to the perception of participants as to whether their competitors would generally benefit relatively more from compliance yielded mixed response frequencies on the five-point expectations scale. On the negative sections, 20 percent of respondents said competitors would probably not benefit relatively more from compliance, and seven percent were surer in their expectations that competitors would not benefit more. On the positive part of the scale, 27 stated that competitors will probably benefit from compliance and 13 percent were sure of the added value of compliance to competitors. Worth mentioning on this matter is the fact that a reasonably significant percentage (33 percent) of producers were inconclusive about the impact of such compliance on their competitors.

Evaluate the benefits that will be gained upon compliance to regulation 950/1:	Strongly Agree	Agree	Don't Know	Disagree	Strongly Disagree
Improve my company's access to export markets	38 %	27 %	24 %	7 %	4 %
Increase local sales	16 %	40 %	22 %	18 %	4 %
Reduce the risks of liability through improved hygiene and health standards	40 %	44 %	11 %	4 %	
Reduce costs through a better control over inputs and reduction of defectuous products	22 %	27 %	27 %	16 %	9 %
Improve labor productivity (healthier and more efficient workforce, less work accidents)	27 %	38 %	22 %	13 %	
Better quality products	40 %	33 %	16 %	11 %	
More efficient and less wasteful process	27 %	31 %	22 %	18 %	2 %
Increase overall productivity	13 %	42 %	22 %	16 %	4 %
Improved ability to compete with imports	27 %	27 %	33 %	7 %	7 %

Correlations

The large number of variables in the questionnaire and similarities in the patterns of responses are two factors that account jointly for the emergence of a substantial 240 variable pairs that are significantly correlated.

The tables below identify nine variable pairs in the benefits section of the questionnaire and 14 variable pairs on the costs side of the questionnaire that posted the highest correlation ratio.

On the benefits side, inter-correlations make solid economic sense:

- "Quality improvement" is strongly correlated with "access to export markets" and with "local sales".
- "Improved ability to compete with imports" is strongly correlated with "local sales", with "quality improvement", and with "production process efficiency".

- “Expected market position of respondent improving after compliance” is strongly correlated with “quality improvement”.
- “Expected market position of competitor improving after compliance” is strongly correlated with “expected market position of respondent improving after compliance”.

Irrespective of economic sense and intuitive acceptance of the links between variable pairs, strong correlation does not necessarily imply causality.

Significant correlation is a statistical description of a situation where response frequencies for one variable co-vary with response frequencies for the other correlated variable. This does not necessarily mean that a causal link of any direction joins the two correlated variables.

HIGHEST CORRELATIONS BETWEEN PAIRS OF COST VARIABLES

	Applying GMP	Applying ISO	Premises	Packaging	Training	Waste management(t)	Traceability (t)	Packaging (t)	Transportation (t)	Management (t)	Training (t)
Applying HACCP	.938**	.811**									
Location and infrastructure			.702**								
Waste management				.733**							
Management					.791**						
Premises (t)							.724**			.740**	
Water (t)						.784**					
Production (t)										.739**	
Traceability (t)								.724**			
Packaging (t)									.790**		
Transportation (t)										.801**	.718**
Management (t)											.807**

** Pearson correlation significant at the 0.01 level (1-tailed test)

(t) refers to variables in the section of the questionnaire relating to expected time frame over which costs will be incurred

HIGHEST CORRELATIONS BETWEEN PAIRS OF BENEFIT VARIABLES

	Improve quality	Increase overall productivity	Improved ability to compete with imports	Do you expect your company's market position to improve after compliance?	Do you expect the market position of your competitors to improve after compliance?
Access to export markets	.772**				
Local sales	.707**		.716**		
Reduce defects		.733**			
Improve quality			.766**	.705**	
Efficient production process		.913**	.714**		
Do you expect your company's market position to improve after compliance?					.814**

** Pearson correlation significant at the 0.01 level (1-tailed test)

B. Field visits

1. Objective: Expert assessment of compliance costs

The research study had originally intended the quantitative section to include a survey based on a questionnaire that would be answered by a group of 45 producers based on their own assessment of compliance costs, and field visits to a different group of producers who would have to answer the same questionnaire with the differences that the answers of that group would be based on precise engineering assessment of compliance costs.

In that sense, field visits that had to be made by experts were supposed to include 45 manufacturing concerns in the sector of production affected by the regulation. Results that were expected from these visits should have made it possible to compare perceived compliance costs with more accurate estimations of these costs.

A gap analysis and a cost analysis were expected to be done in accordance with the experts' own templates for such analyses, and an analytical review of that template was supposed to be submitted to the research team for inclusion in the study.

None of this work was delivered to the research team.

Instead, 32 questionnaires ¹⁰ that were partially filled by the contracted party some time after the alleged visits were carried out.

¹⁰ Of the 32 questionnaires, one was discarded as invalid due to the fact that just about a quarter of its questions were answered.

2. Comparing perceived compliance costs with actual costs

Answers from the remainder 31 questionnaires were duly processed and results were compared with those derived from the sample of 45 producers.

Appendix G summarizes the results obtained from the 31 questionnaires.

A further step in data processing involved running an independent samples t-test intended to ascertain whether there is a statistically significant difference between the responses on actual compliance costs of the 31 manufacturers visited and those on compliance costs as estimated by 45 manufacturers who responded to the questionnaire on their own and according to their expectations of compliance costs.

Appendix J compares the mean and standard deviation of the frequencies for each variable in each of the two samples, and appendix I compares the homogeneity of variance for each variable according to the Levene Test for Equality of Variance in order to ascertain the significance of the difference in results obtained from the two samples.

Processing indicates homogeneity of the two samples

The t-test analysis reveals homogeneous results for the two samples (the CCIA-BML and the field visits samples) at the five percent level of significance.

The results obtained from the two samples diverge on count of seven variables only out of a total of 30 variables¹¹.

Comparing the two samples from a mean and standard deviation standpoints, it can be deduced that frequencies resulting from the two lots have comparable means pertaining to each of the 30 variables.

However, standard deviations of these variables differ between the two samples in a distinctive way: variables relating to the magnitude of costs showed a bigger spread around the mean in the sample based on field visits. Variables pertaining to the period over which costs are expected to be incurred demonstrated a much smaller standard deviation for the field visits sample compared to the results obtained from the CCIA-BML sample.

This homogeneity implies that results from field visits confirm those obtained from the CCIA-BML survey and hence their impact on the overall assessment runs in the same direction as that already determined by the CCIA-BML sample.

11 Of a total of 52 variables constituting the survey, only the 30 core variables relating to costs were compared between the two samples

VI. ASSESSMENT OF THE OVERALL IMPACT

Benefits from regulation expected to exceed costs

In order to reach a bottom-line assessment of total benefits and costs, some 39 cost parameters and 30 benefit parameters were identified and rated. In a bid to eliminate, or at least drastically reduce, the element of subjectivity in the rating process, the attribution of a value for each parameter was derived from one or more of five sources of information the research study drew on. These sources of information are: the study's own survey, direct interviews conducted by the research team, official documents, and the study's working group discussions, and statistical data.

The tables below substantiate the rating or grade assigned to each benefit and cost parameter, and relate survey results to the assessment scale used.

Based on these tables, total values are reached for the benefits each category of stakeholders is expected to reap and the costs it is expected to incur. The table below summarizes these values by stakeholder and reaches a benefit-to-cost ratio of 1.16.

The ratio indicates that, based on the benefit and cost parameters identified, and on the values assigned to each of these parameters, the benefits to be expected from ministerial decision 950/1 exceed that decision's costs.

RIA assessment	
Stakeholder Benefits	Values
Producers subtotal	152
Business sector subtotal	9
Consumers/society subtotal	48
Farmers subtotal	10
Government subtotal	14
Laboratories subtotal	8
Academic institutions subtotal	6
International organizations subtotal	6
Total benefits	253
Stakeholder Costs	
Producers subtotal	87
Consumers subtotal	9
Local raw material producers subtotal	9
Business Support Organizations subtotal	29
Government subtotal	60
Laboratories subtotal	16
Academic institutions subtotal	4
International organizations subtotal	4
Total costs	218
Benefit/Cost Ratio	253/218 = 1.16

Regulatory failure is improbable

Appendix K sought to evaluate the risk of regulatory failure on the basis of 16 parameters for such risk. For regulation 950/1 that risk was found to be minimal.

The highest scored obtained were for the following parameters:

- Objectives of the regulation were perceived by the majority of producers as being very clear
- The majority of producers were also convinced of the government's intention and ability to enforce the regulation through inspection and constant monitoring
- Inter-ministerial cooperation and coordination in the application of the regulation were also clear to producers
- Producers showed no intention to legally challenge the enforcement of the regulation or to lobby against it
- Manufacturers were also certain of the outcome of the regulation and its implication on the sector

These assertions show producers' significant understanding and acceptance of the regulation which render regulatory failure unlikely.

BENEFITS TO:	5 Substantial Extent of impact	4 Large	3 Moderate Time Frame	2 Low	1 Minimal
ESTABLISHED PRODUCERS					
Improved producer image	5	5			
Improved product image	5	5			
Improved access to export markets	4	5			
Improved ability to compete with imports	4	5			
Increased local sales	4	5			
Reduced product liability	4	5			
Improved product quality	4	5			
Reduce costs through a better control over inputs and reduction of defectuous products	3	5			
Improve workers' productivity	4	5			
More efficient and less wasteful production process	4	5			
Increased overall productivity	4	5			
Reduced costs arising from consignments being denied export market entry	4	5			
Regulatory requirements render market entry more costly thereby curbing competition	3	5			
Reducing unfair competition from hitherto unregulated and unregistered producers	4	5			
Tax exemptions (zoning)	4	5			
Reduced tariffs on imported raw materials (provided they don't compete with local production)	4	5			
Reduced testing fees	3	5			
Subtotal producers	67	85			
THE BUSINESS SECTOR AT LARGE					
Larger turnover in retails, hospitality and catering sectors	4	5			
Subtotal business sector	4	5			

BENEFITS TO:

CONSUMERS/ SOCIETY

	5 Substantial	4 Large	3 Moderate	2 Low	1 Minimal
	Extent of impact		Time Frame		
Safer products	5	5			
Cleaner environment	5	5			
Reduced health hazards	3	3			
Job creation:					
Ministries hiring of inspectors	3	3			
Consulting firms issuing certifications	4	3			
Producers hiring additional staff for quality management	4	5			
Subtotal consumers/society	24	24			

FARMERS

MoA subsidy under contract farming scheme acting as incentive to improve produce	5	5			
Subtotal farmers	5	5			

MINISTRIES AND GOVERNMENT AGENCIES

Favorable public perception of public administration	4	4			
Reduced spending on public health	3	3			
Subtotal government	7	7			

LABORATORIES

More income from testing for compliance	3	5			
Subtotal laboratories	3	5			

ACADEMIC INSTITUTIONS

Assistance from donor countries to finance support programs to F&B industry	3	3			
Subtotal academic institutions	3	3			

INTERNATIONAL ORGANIZATIONS

Favorable public perception and proper channel of resources	3	3			
Subtotal international organizations	3	3			
TOTAL	116	137			

	5	4	3	2	1
COSTS TO:	Substantial	Large	Moderate	Low	Minimal
PRODUCERS	Extent of impact	Time Frame			

Fixed costs

Investing in new equipment	2	2			
Rendering production process compliant to health standards	1	2			
Rendering location and infrastructure adequate	2	3			
Premises (cleanliness, pollution control, safety)	2	2			
Setting up an adequate water supply	1	1			
Putting in place traceability systems	1	2			
Improving storage and warehousing to fit health standards	1	2			

Variable costs

Raw materials and additives compliant with the regulation	2	2			
Waste management	1	2			
Workers (health certificates, regular check-ups, personal hygiene)	1	1			
Monitoring traceability systems	1	5			
Use of adequate packaging	1	2			
Testing of raw materials and final products	1	2			
Maintenance of storage and warehousing	1	5			
Maintenance of equipments	1	5			
Maintenance of transportation	1	5			
Employing additional staff for quality management	3	2			
Training of existing staff	1	2			
Employing consultants	3	3			
Collecting and storing information required by regulation	2	5			
Management and control of compliance	1	2			
Subtotal producers	30	57			

CONSUMERS

Higher product prices	4	5			
Subtotal consumers	4	5			

LOCAL RAW MATERIALS PRODUCERS

Compliance of raw materials to the regulation	5	4
Subtotal local raw material producers	5	4

BUSINESS SUPPORT ORGANIZATIONS

Specialized services to producers	3	3
Equipping laboratories run by Chambers of Commerce	3	3
Advisory services to producers	3	3
Involvement in third-party supervision	3	3
Lobbying and advocacy	2	3
Subtotal Business Support Organizations	14	15

MINISTRIES AND GOVERNMENT AGENCIES

Supervision and administration	3	5
Hiring and training of inspectors	3	5
Building and maintaining adequate infrastructure	5	4
Cost of allocating land for industrial zones	5	4
Cost of subsidies to farmers in contract farming scheme	5	5
Lower government revenues due to tax exemptions	3	5
Lower government revenues due to reduced customs duties on imports of raw materials	3	5
Subtotal government	27	33

LABORATORIES

Investment in advanced testing equipment	3	5
Reduce testing fees	3	5
Subtotal laboratories	6	10

ACADEMIC INSTITUTIONS

Resources dedicated to projects supporting producers	2	2
Subtotal academic institutions	2	2

INTERNATIONAL ORGANIZATIONS

Advisory support to producers	2	2
Subtotal international organizations	2	2

TOTAL	90	128
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VII. RECOMMENDATIONS

A. Over the short term

1. Recommendations addressed to the government

- More coordination and consultations with the ministries involved in enforcing ministerial decision 950/1 are needed with a view to reducing the risk of misinterpretation of some of the regulatory obligations on the part of producers. Such misinterpretation could give rise to unwarranted penalties.
- Enforcing ministries should seek to facilitate producers' access to long-term subsidized financing. Such financing would be conditional upon producers undertaking to make the long-term investments needed for compliance with ministerial decision 950/1.
- Special financing and tax exemption schemes should be put in place to support factories that can only comply with the ministerial decision by re-locating.
- Ministries in charge of enforcing the ministerial decision under review could consider implementing compliance by stages that can span over three to five years, and could cooperate with producers and business support organizations to define those stages.

Ministries also ought to take into account in the checklist the specifics of each sub sector of the F&B industry and assign different weights to compliance parameters depending on the sub sector and the type of production used.

Inspectors need to be adequately trained in order to better assess the extent of compliance of factories and render the inspection process accurate and consistent with the requirements of the checklist.

- Stringent zoning conditions imposed on F&B factories should be relaxed. F&B factories should be allowed to be established anywhere in the country since they do not constitute a serious threat to the environment.
- This RIA estimated that 12 percent of companies in the food and beverages sector (nearly 100 companies) are forced to relocate their factories due to inadequate infrastructure, hence the urgent need for financial and logistic support to these factories.

2. Recommendations addressed to business support organizations

- Producers are dismayed at the manner in which crucially needed assistance is not being adequately channeled to intended beneficiaries in the F&B sector. In their view, Chambers are better positioned to contact donors and act as direct channels to assistance offered.

B. Over the medium term

1. Recommendations addressed to the government

- The creation of an industrial zone dedicated to F&B producers is a project that would go a long way in facilitating compliance with ministerial decision 950/1.
- Equipping labs with adequate testing equipment in order to render more reliable the tests required by F&B producers.

2. Recommendations addressed to business support organizations

- F&B producers expect business support organizations to help in securing financial and/or technical assistance from international donor organizations to facilitate adopting traceability systems within the more general setup of quality management. In particular, producers look up to the CCIA-BML, which already manages the bar coding service in Lebanon, for support and assistance in the development of sector-specific traceability systems.

Chambers of Commerce are expected to lobby for, and subsequently assume, an active role in third-party inspection to ascertain producers' compliance with obligations defined in the ministerial decision.

- Producers expect Chambers of Commerce to negotiate on their behalf, within the framework of bilateral trade negotiations and/or bilateral trade committees, more equitable terms governing product norms and conformity assessment. They urge Chambers to coordinate on a bilateral basis provisions affecting Technical Barriers to Trade (TBTs) and agreements on Sanitary and Phyto-sanitary (SPS) measures.
- The F&B industries are practically the sole potential beneficiaries of any concerted effort leading to the identification, delimitation and safeguard of the country's Geographical Indications (GI) and products entitled to GI protection. Producers are convinced that Chambers of Commerce need to take the initiative of creating a GI association that would eventually join analogous EU associations and secure worldwide protection for Lebanese food and beverage products linked to the country's tradition and/or regions.
- F&B producers expect Chamber of Commerce to take the initiative of creating and managing a quality label for their products.

C. Over the long term

1. Recommendations addressed to the government

- The rehabilitation and expansion of water supply and waste management infrastructure in industrial areas, and more particularly in areas with high concentration of F&B manufacturers would render compliance on these two counts both possible and less costly.

APPENDIX

ABBREVIATIONS

REFERENCES

COMPARATIVE TALLY OF VIOLATIONS OF PRODUCT SPECIFICATIONS: LEBANON – SYRIA –JORDAN –
SAUDI ARABIA

IMPORTS AND EXPORTS OF FOOD AND BEVERAGES BY HS CODE

LARGEST F&B EXPORTMARKETS AND SUPPLIERSFROM 2007 TO 2011

SURVEY RESULTS/CCIA-BML SAMPLE

SURVEY RESULTS/FIELD VISITS SAMPLE

SURVEY RESULTS/CCIA-BML AND FIELD VISITS SAMPLES COMBINED

T-TEST ANALYSIS OF THE CCIA-BML AND FIELD VISITS SAMPLES

COMPARING THE TWO SAMPLES

ASSESSMENT OF THE REGULATION

ASSESSMENT SCALE

EXPLAINING COSTS AND BENEFITS PARAMETERS

A. ABBREVIATIONS

ALI: Association of Lebanese Industrialists

AQIS: Australian Quarantine and Inspection Service

AUB: American University of Beirut

CCIA-BML: Chamber of Commerce, Industry and Agriculture of Beirut and Mount Lebanon

FAO: Food and Agriculture Organization

FDA: Food and Drug Administration

GMP: Good Manufacturing Practice

HACCP: Hazard Analysis and Critical Control Points

IDAL: Investment Development Authority of Lebanon

IRI: Industrial Research Institute

LARI: Lebanese Agricultural Research Institute

LU: Lebanese University

MoA: Ministry of Agriculture

MoE: Ministry of Environment

MoET: Ministry of Economy and Trade

MoI: Ministry of Industry

MoPH: Ministry of Public Health

NGO: Non-Governmental Organization

SLFI: Syndicate of Lebanese Food Industrialists

SPS: Sanitary and Phyto-Sanitary

TBT: Technical Barriers to Trade

UNIDO: United Nations Industrial Development Organization

USAID: United States Agency for International Development

USJ: University Saint-Joseph

WHO: World Health Organization

WTO: World Trade Organization

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C. COMPARATIVE TALLY OF VIOLATIONS OF PRODUCT SPECIFICATIONS: LEBANON – SYRIA – JORDAN – SAUDI ARABIA

LAST 100 CASES OF PRODUCTS DENIED ACCESS TO US MARKETS - VIOLATIONS CITED

	LEBANON Sep2007-Aug2011	JORDAN Jan2004 Aug2011	SYRIA Oct2006 Sep2011	SAUDI ARABIA Jan2004 Aug2011
LABEL	59	60	48	65
MISBRANDING	35	27	25	32
ADMINISTRATIVE	30	19	45	6
FILTHY	13	12	5	38
SALMONELLA	7	13	13	2
UNSAFE COLOR ADDITIVES	19	18	11	15
PESTICIDES	1	2	3	8
CHEMICAL PRESERVATIVES	3		3	2
POISONOUS SUBSTANCES	1			
EXCESSIVE SULFITES			1	1
AFLATOXIN		1		
TOTAL	168	152	154	169

D. IMPORTS AND EXPORTS OF FOOD AND BEVERAGES BY HS CODE

IMPORTS AND EXPORTS OF FOOD AND BEVERAGES BY HS CODE					
HS	Imports		Exports		
04: Dairy produce; birds' eggs; natural honey; edible products of animal origin, not elsewhere specified or included	Thousand \$	Tons	Thousand \$	Tons	Trade Balance
2007	213,324	63,894	8,331	13,866	-204,993
2008	226,241	53,614	9,454	11,463	-216,787
2009	253,445	70,058	8,816	10,769	-244,629
2010	272,130	71,319	9,218	11,617	-262,912
2011	299,495	66,175	9,103	6,751	-290,392
HS	Imports		Exports		
08: Edible fruit and nuts; peel of citrus fruit or melons	Thousand \$	Tons	Thousand \$	Tons	Trade Balance
2007	69,258	36,095	53,159	318,802	(16,099)
2008	84,772	40,992	52,824	332,310	(31,948)
2009	100,216	43,642	55,885	335,618	(44,331)
2010	110,859	41,950	77,908	368,915	(32,951)
2011	115,166	42,175	71,981	299,776	(43,185)
HS	Imports		Exports		
09: Coffee, tea, maté and spices	Thousand \$	Tons	Thousand \$	Tons	Trade Balance
2007	65,405	28,046	16,455	2,766	(48,950)
2008	71,568	25,032	15,240	2,624	(56,328)
2009	64,710	26,865	16,245	2,779	(48,465)
2010	78,682	28,477	17,859	3,125	(60,823)
2011	100,269	27,541	22,489	3,396	(77,780)
HS	Imports		Exports		
11: Products of the milling industry; malt; starches; wheat gluten	Thousand \$	Tons	Thousand \$	Tons	Trade Balance
2007	15,907	26,475	662	1,682	(15,245)
2008	17,147	23,140	11,532	22,702	(5,615)
2009	20,355	33,988	7,831	13,560	(12,524)
2010	24,412	41,697	6,636	8,732	(17,776)
2011	31,044	41,102	9,571	10,024	(21,473)

HS	Imports		Exports		
13: Lac; gums, resins and other vegetable saps and extracts	Thousand \$	Tons	Thousand \$	Tons	Trade Balance
2007	1,225	169	-	-	(1,225)
2008	1,429	142	7	4	(1,422)
2009	1,501	169	19	5	(1,482)
2010	1,528	182	17	10	(1,511)
2011	1,829	211	63	15	(1,766)

HS	Imports		Exports		
15: Animal or vegetable fats and oils and their cleavage products; prepared edible fats; animal or vegetable waxes	Thousand \$	Tons	Thousand \$	Tons	Trade Balance
2007	76,191	63,305	16,969	8,664	(59,222)
2008	102,754	62,353	19,079	7,979	(83,675)
2009	101,105	82,055	18,777	7,583	(82,328)
2010	128,269	100,134	22,631	10,235	(105,638)
2011	173,496	98,895	21,370	10,221	(152,126)

HS	Imports		Exports		
16: Preparations of meat, of fish or of crustaceans, mollusks or other aquatic invertebrates	Thousand \$	Tons	Thousand \$	Tons	Trade Balance
2007	67,265	20,135	11,044	4,162	(56,221)
2008	76,085	19,259	16,085	5,149	(60,000)
2009	70,611	17,661	18,186	5,423	(52,425)
2010	89,213	22,036	15,286	4,875	(73,927)
2011	88,606	20,083	17,354	50,939 *	(71,252)

* The number is based on Customs statistics but is inconsistent both with past years' data and with price ratio of same year's exports. The statistic is therefore not used in the analysis.

HS	Imports		Exports		
17: Sugars and sugar confectionery	Thousand \$	Tons	Thousand \$	Tons	Trade Balance
2007	84,731	172,676	20,822	4,596	(63,909)
2008	84,560	61,988	23,695	5,018	(60,865)
2009	104,441	79,726	24,663	4,835	(79,778)
2010	142,655	90,668	25,992	4,794	(116,663)
2011	175,992	93,949	30,538	8,549	(145,454)

HS	Imports		Exports		
18: Cocoa and cocoa preparations	Thousand \$	Tons	Thousand \$	Tons	Trade Balance
2007	50,914	14,023	14,185	4,596	(36,729)
2008	54,536	12,646	18,101	5,018	(36,435)
2009	62,871	12,175	17,900	4,835	(44,971)
2010	74,045	13,850	29,058	4,794	(44,987)
2011	181,320	59,962	32,130	51,363	(149,190)

HS	Imports		Exports		
19: Preparations of cereals, flour, starch or milk; pastry cooks' products	Thousand \$	Tons	Thousand \$	Tons	Trade Balance
2007	91,159	40,807	23,588	11,439	(67,571)
2008	121,732	44,245	23,929	8,109	(97,803)
2009	145,525	49,864	30,942	10,925	(114,583)
2010	164,838	56,998	42,448	15,636	(122,390)
2011	187,320	59,962	39,988	14,166	(147,332)
HS	Imports		Exports		
20: Preparations of vegetables, fruit, nuts or other parts of plants	Thousand \$	Tons	Thousand \$	Tons	Trade Balance
2007	50,577	43,677	67,479	55,455	16,902
2008	56,631	43,422	86,054	55,223	29,423
2009	55,809	43,811	89,644	53,835	33,835
2010	62,415	48,301	96,702	58,058	34,287
2011	74,725	51,986	118,001	50,720	43,276
HS	Imports		Exports		
21: Miscellaneous edible preparations	Thousand \$	Tons	Thousand \$	Tons	Trade Balance
2007	93,758	24,320	20,204	12,056	(73,554)
2008	108,593	24,914	26,750	14,955	(81,843)
2009	119,880	28,779	29,082	15,125	(90,798)
2010	129,097	30,474	28,237	14,340	(100,860)
2011	153,633	34,930	37,346	16,350	(116,287)
HS	Imports		Exports		
22.09: Vinegar and substitutes for vinegar obtained from acetic acid	Thousand \$	Tons	Thousand \$	Tons	Trade Balance
2007	236	275	479	655	243
2008	343	466	658	792	315
2009	461	477	675	824	214
2010	492	468	771	862	279
2011	675	699	848	859	

E. LARGEST F&B EXPORT MARKETS AND SUPPLIERS FROM 2007 TO 2011

LARGEST F&B EXPORT MARKETS IN 2011				
Rank	Country	Thousand \$	Tons	% of total F&B exports
1	Syria	77,738	160,025	18.92
2	Saudi Arabia	72,850	79,456	17.73
3	Jordan	39,205	26,642	9.54
4	Iraq	22,250	24,801	5.42
5	United States	22,106	6,956	5.38
6	Egypt	19,426	44,808	4.73
7	United Arab Emirates	19,252	21,564	4.69
8	Kuwait	18,978	45,061	4.62
9	Qatar	17,943	12,513	4.37
10	Canada	10,051	4,098	2.45
	Total	319,799	425,924	77.84
	Total F&B exports in 2011	410,820		

LARGEST F&B SUPPLIERS IN 2011				
Rank	Country	Thousand \$	Tons	% of total F&B imports
1	France	112,214	45,301	7.60
2	Egypt	104,494	64,612	7.08
3	Netherlands	90,156	27,381	6.11
4	Brazil	90,107	31,988	6.10
5	Saudi Arabia	80,560	31,562	5.46
6	Turkey	75,988	36,589	5.15
7	Syria	70,464	45,496	4.77
8	United States	63,684	17,739	4.31
9	Thailand	62,192	39,229	4.21
10	Italy	57,425	25,183	3.89
	Total	807,284	365,080	54.69
	Total F&B imports in 2011	1,476,163		

LARGEST F&B EXPORT MARKETS IN 2010				
<i>Rank</i>	<i>Country</i>	<i>Thousand \$</i>	<i>Tons</i>	<i>% of total F&B exports</i>
1	Saudi Arabia	63,253	81,910	16.97
2	Syria	62,263	163,787	16.71
3	Iraq	31,538	31,573	8.46
4	Jordan	25,036	29,795	6.72
5	United States	21,608	7,225	5.80
6	Egypt	20,969	60,545	5.63
7	United Arab Emirates	20,028	21,081	5.37
8	Kuwait	16,981	45,164	4.56
9	Qatar	15,776	12,649	4.23
10	Canada	10,172	4,315	2.73
	Total	287,624	458,044	77.17
	Total F&B exports	372,717		

LARGEST F&B SUPPLIERS IN 2010				
<i>Rank</i>	<i>Country</i>	<i>Thousand \$</i>	<i>Tons</i>	<i>% of total F&B imports</i>
1	France	106,009	51,197	8.29
2	Netherlands	86,142	28,793	6.74
3	Syria	80,584	60,483	6.30
4	Brazil	77,689	31,194	6.08
5	Saudi Arabia	75,116	43,920	5.87
6	Egypt	69,274	42,467	5.42
7	Turkey	57,026	31,513	4.46
8	United States	56,600	19,351	4.43
9	Italy	52,484	25,601	4.10
10	Belgium	45,068	19,454	3.52
	Total	705,992	353,973	55.21
	Total F&B imports	1,278,692		

LARGEST F&B EXPORT MARKETS IN 2009				
<i>Rank</i>	<i>Country</i>	<i>Thousand \$</i>	<i>Tons</i>	<i>% of total F&B exports</i>
1	Saudi Arabia	50,795	80,123	15.94
2	Syria	41,974	130,276	13.17
3	Iraq	27,777	34,836	8.71
4	United States	22,703	7,632	7.12
5	Jordan	22,296	27,796	6.99
6	United Arab Emirates	18,907	25,062	5.93
7	Kuwait	17,668	48,486	5.54
8	Egypt	15,190	44,301	4.77
9	Qatar	14,383	13,317	4.51
10	Canada	8,604	3,510	2.70
	Total	240,297	415,339	75.39
	Total F&B exports	318,751		

LARGEST F&B SUPPLIERS IN 2009				
<i>Rank</i>	<i>Country</i>	<i>Thousand \$</i>	<i>Tons</i>	<i>% of total F&B exports</i>
1	The Netherlands	87,631	32,425	7.96
2	Egypt	75,058	57,166	6.82
3	France	74,278	22,923	6.75
4	Brazil	71,788	45,428	6.52
5	Saudi Arabia	63,354	41,006	5.75
6	Syria	61,014	53,996	5.54
7	United States	53,284	14,525	4.84
8	Thailand	51,648	57,871	4.69
9	Turkey	45,900	23,528	4.17
10	Italy	45,599	20,284	4.14
	Total	629,554	369,152	57.18
	Total F&B exports	1,101,003		

LARGEST F&B EXPORT MARKETS IN 2008				
<i>Rank</i>	<i>Country</i>	<i>Thousand \$</i>	<i>Tons</i>	<i>% of total F&B exports</i>
1	Saudi Arabia	46,384	96,631	15.29
2	Syria	38,242	125,071	12.60
3	Iraq	28,413	32,260	9.36
4	Jordan	21,606	25,157	7.12
5	United Arab Emirates	21,421	28,633	7.06
6	United States	20,497	7,050	6.76
7	Kuwait	16,500	47,218	5.44
8	Qatar	14,538	13,585	4.79
9	Egypt	13,657	41,208	4.50
10	Canada	9,575	3,785	3.16
	Total	230,833	420,598	76.07
	Total F&B exports	303,429		

LARGEST F&B SUPPLIERS IN 2008				
<i>Rank</i>	<i>Country</i>	<i>Thousand \$</i>	<i>Tons</i>	<i>% of total F&B imports</i>
1	Brazil	88,804	72,175	8.82
2	Egypt	80,707	41,725	8.02
3	France	66,943	23,041	6.65
4	Saudi Arabia	55,210	30,190	5.49
5	Netherlands	54,610	17,091	5.43
6	United Arab Emirates	42,645	59,190	4.24
7	Turkey	39,664	17,908	3.94
8	Syria	39,348	37,611	3.91
9	Thailand	39,224	25,014	3.90
10	Italy	37,261	16,384	3.70
	Total	544,416	340,329	54.09
	Total F&B imports	1,006,416		

LARGEST F&B EXPORT MARKETS IN 2007				
<i>Rank</i>	<i>Country</i>	<i>Thousand \$</i>	<i>Tons</i>	<i>% of total F&B exports</i>
1	Syria	35,801	113,965	14.11
2	Saudi Arabia	34,132	86,182	13.45
3	United States	19,896	8,477	7.84
4	Kuwait	18,563	49,068	7.31
5	Iraq	18,088	21,293	7.13
6	Jordan	16,736	24,682	6.59
7	United Arab Emirates	16,353	28,986	6.44
8	Egypt	12,857	39,840	5.07
9	Qatar	11,314	11,283	4.46
10	Canada	9,267	4,633	3.65
	Total	193,007	388,409	76.05
	Total F&B exports	253,782		

LARGEST F&B SUPPLIERS IN 2007				
<i>Rank</i>	<i>Country</i>	<i>Thousand \$</i>	<i>Tons</i>	<i>% of total F&B imports</i>
1	Brazil	89,339	80,465	10.15
2	France	58,481	25,456	6.65
3	Egypt	51,789	34,165	5.89
4	Netherlands	48,891	19,260	5.56
5	Syria	42,866	38,002	4.87
6	Saudi Arabia	38,460	29,363	4.37
7	United Arab Emirates	36,535	58,564	4.15
8	Italy	32,927	19,906	3.74
9	Turkey	31,126	18,541	3.54
10	Thailand	30,939	25,679	3.52
	Total	461,353	349,401	52.43
	Total F&B imports	879,965		

F. SURVEY RESULTS/ CCIA-BML SAMPLE

A. SURVEY RESULTS/CCIA-BML SAMPLE		
Workforce	Frequency	Percent
Less than 10	8	17.8
Between 10 and 50	27	60.0
Between 50 and 100	3	6.7
More than 100	7	15.6
Total	45	100.0

PROFILE OF RESPONDENTS		
Surface	Frequency	Percent
Less than 100 m2	1	2.2
Between 100 m2 and 300 m2	10	22.2
Between 300 m2 and 500 m2	5	11.1
More than 500 m2	29	64.4
Total	45	100.0

PROFILE OF RESPONDENTS		
Date of establishment	Frequencies	Percent
40 years and older	9	20.0
Between 30 and 39 years	22	48.9
Less than 10 years	8	17.8
Total	39	86.7

PROFILE OF RESPONDENTS		
Production scale	Frequency	Percent
Less than \$100,000	2	4.4
Between \$100,000 and \$300,000	8	17.8
Between \$300,000 and \$500,000	2	4.4
More than \$500,000	33	73.3
Total	45	100.0

Product lines	Frequency	Percent
One	7	15.6
Between 2 and 5	25	55.6
Between 5 and 10	6	13.3
More than 10	7	15.6
Total	45	100.0
Compliant with Lebanese standards	Frequency	Percent
Yes	25	55.6
To a large extent	14	31.1
To some extent	2	4.4
No	1	2.2
Total	42	93.3
Missing	3	6.7
Total	45	100.0
Compliant with Codex Alimentarius	Frequency	Percent
Yes	11	24.4
To a large extent	11	24.4
To some extent	2	4.4
No	13	28.9
Total	37	82.2
Missing	8	17.8
Total	45	100.0
Applying HACCP	Frequency	Percent
Yes	7	15.6
To a large extent	10	22.2
To some extent	5	11.1
No	16	35.6
Total	38	84.4
Missing	7	15.6
Total	45	100.0
Applying GMP	Frequency	Percent
Yes	8	17.8
To a large extent	10	22.2
To some extent	7	15.6
No	13	28.9
Total	38	84.4
Missing	7	15.6
Total	45	100.0
Applying ISO	Frequency	Percent
Yes	12	26.7

To a large extent	7	15.6
To some extent	2	4.4
No	11	24.4
Total	32	71.1
Missing	13	28.9
Total	45	100.0
Member of SLFI	Frequency	Percent
Yes	21	46.7
No	5	11.1
Total	26	57.8
Missing	19	42.2
Total	45	100.0

Member of CCIABML	Frequency	Percent
Yes	41	91.1
No	1	2.2
Total	42	93.3
Missing	3	6.7
Total	45	100.0

Member of ALI	Frequency	Percent
Yes	28	62.2
No	4	8.9
Total	32	71.1
Missing	13	28.9
Total	45	100.0

Other membership	Frequency	Percent
Yes	7	15.6
No	2	4.4
Total	9	20.0
Missing	36	80.0
Total	45	100.0

COSTS

	Expected costs: moderate	Expected costs: high	Expected costs: excessive	Expected costs: excessive, requires substantial borrowing	Impossible, requires unaffordable relocation
Rendering external location and infrastructure adequate	58 %	16 %	7 %	11 %	9 %
Premises (internal building layout, drainage, sanitary, lighting)	69 %	20 %	9 %	2 %	
Production equipment (sterilization, inspection, maintenance, calibration)	64 %	27 %	4 %	2 %	2 %
Clean water supply	87 %	11 %	2 %		
Waste management and disposal including main sewage and water drain	87 %	11 %	2 %		
Workers (health certificates, regular medical check-ups, personal hygiene)	82 %	13 %		2 %	2 %
Raw materials and additives compliance with norms and standards	71 %	20 %	9 %		
Production procedures documentation	78 %	13 %	7 %		
Implementation of a traceability system	78 %	16 %	7 %		
Packaging and labeling compliance	80 %	18 %	2 %		
Laboratory testing equipment and materials	76 %	20 %	4 %		
Warehousing and distribution	80 %	9 %	9 %	2 %	
Transportation	80 %	13 %	4 %		
Food safety management cost	76 %	13 %	9 %	2 %	
Cost of training	80 %	9 %	7 %	2 %	

TIME FRAME OF COSTS

	Outlays: Less than 1 year	Outlays over: 1 to 3 years	Outlays over: 3 to 5 years	Outlays over: More than 5 years
Rendering external location and infrastructure adequate	47 %	24 %	16 %	13 %
Premises (internal building layout, drainage, sanitary, lighting)	64 %	20 %	9 %	7 %
Production equipment (sterilization, inspection, maintenance, calibration)	67 %	24 %	2 %	7 %
Clean water supply	82 %	13 %		4 %
Waste management and disposal including main sewage and water drain	73 %	20 %		7 %
Workers (health certificates, regular medical check-ups, personal hygiene)	82 %	11 %	2 %	4 %
Raw materials and additives, compliance with norms and standards	71 %	13 %	2 %	11 %
Production procedures documentation	58 %	29 %	4 %	9 %
Implementation of a traceability system	62 %	24 %	9 %	4 %
Packaging and labeling compliance	78 %	18 %	2 %	2 %
Laboratory testing equipment and materials	78 %	13 %		9 %
Warehousing and distribution	73 %	18 %	4 %	4 %
Transportation	76 %	18 %	4 %	2 %
Food safety management cost	64 %	22 %	9 %	4 %
Cost of training	71 %	18 %	7 %	4 %

BENEFITS

Evaluate the benefits that will be gained upon compliance to regulation 950/1:

Improve my company's access to export markets

Increase local sales

Reduce the risks of liability through improved hygiene and health standards

Reduce costs through a better control over inputs and reduction of defectuous products

Improve labor productivity (healthier and more efficient workforce, less work accidents)

Better quality products

More efficient and less wasteful process

Increase overall productivity

Improved ability to compete with imports

	Strongly Agree	Agree	Don't Know	Disagree	Strongly Disagree
Improve my company's access to export markets	38 %	27 %	24 %	7 %	4 %
Increase local sales	16 %	40 %	22 %	18 %	4 %
Reduce the risks of liability through improved hygiene and health standards	40 %	44 %	11 %	4 %	
Reduce costs through a better control over inputs and reduction of defectuous products	22 %	27 %	27 %	16 %	9 %
Improve labor productivity (healthier and more efficient workforce, less work accidents)	27 %	38 %	22 %	13 %	
Better quality products	40 %	33 %	16 %	11 %	
More efficient and less wasteful process	27 %	31 %	22 %	18 %	2 %
Increase overall productivity	13 %	42 %	22 %	16 %	4 %
Improved ability to compete with imports	27 %	27 %	33 %	7 %	7 %

COMPETITIVENESS

Do you expect compliance costs to be reflected in higher prices for your product(s)?

Do you expect your competitors to raise their product prices due to compliance costs?

Do you expect your company's market position to improve after compliance?

Do you expect the market position of your competitors to improve after compliance?

Within your company, do you expect the benefits of compliance to exceed the costs of compliance?

Do you expect your competitors to benefit more from compliance?

	Yes	Probably	Not Sure	Probably not	No
Do you expect compliance costs to be reflected in higher prices for your product(s)?	49 %	36 %	7 %	2 %	4 %
Do you expect your competitors to raise their product prices due to compliance costs?	40 %	33 %	18 %	4 %	4 %
Do you expect your company's market position to improve after compliance?	36 %	29 %	22 %	9 %	4 %
Do you expect the market position of your competitors to improve after compliance?	36 %	29 %	22 %	11 %	2 %
Within your company, do you expect the benefits of compliance to exceed the costs of compliance?	22 %	22 %	31 %	13 %	11 %
Do you expect your competitors to benefit more from compliance?	13 %	27 %	33 %	20 %	7 %

G. SURVEY RESULTS/FIELD VISITS SAMPLE

COSTS

	Expected costs: moderate	Expected costs: high	Expected costs: excessive	Expected costs: excessive, requires substantial borrowing	Impossible, requires unaffordable relocation
Rendering external location and infrastructure adequate	77 %	7 %			16 %
Premises (internal building layout, drainage, sanitary, lighting)	77 %	7 %			16 %
Production equipment (sterilization, inspection, maintenance, calibration)	81 %	7 %			13 %
Clean water supply	77 %	7 %			13 %
Waste management and disposal including main sewage and water drain	77 %	7 %			16 %
Workers (health certificates, regular medical check-ups, personal hygiene)	81 %	7 %			13 %
Raw materials and additives compliance with norms and standards	81 %	7 %			13 %
Production procedures documentation	81 %	7 %			13 %
Implementation of a traceability system	81 %	7 %			13 %
Packaging and labeling compliance	81 %	7 %			13 %
Laboratory testing equipment and materials	81 %	7 %			13 %
Warehousing and distribution	77 %	7 %			16 %
Transportation	81 %	7 %			13 %
Food safety management cost	81 %	7 %			13 %
Cost of training	81 %	7 %			13 %

TIME FRAME OF COSTS

	Outlays: Less than 1 year	Outlays over: 1 to 3 years	Outlays over: 3 to 5 years	Outlays over: More than 5 years
Rendering external location and infrastructure adequate	16 %	74 %	10 %	
Premises (internal building layout, drainage, sanitary, lighting)	42 %	49 %	10 %	
Production equipment (sterilization, inspection, maintenance, calibration)	36 %	55 %	10 %	
Clean water supply	48 %	42 %	10 %	
Waste management and disposal including main sewage and water drain	32 %	59 %	10 %	
Workers (health certificates, regular medical check-ups, personal hygiene)	45 %	45 %	10 %	
Raw materials and additives, compliance with norms and standards	48 %	42 %	10 %	
Production procedures documentation	39 %	52 %	10 %	
Implementation of a traceability system	39 %	52 %	10 %	
Packaging and labeling compliance	45 %	45 %	10 %	
Laboratory testing equipment and materials	48 %	42 %	10 %	
Warehousing and distribution	36 %	55 %	10 %	
Transportation	48 %	42 %	10 %	
Food safety management cost	45 %	45 %	10 %	
Cost of training	48 %	42 %	10 %	

H. SURVEY RESULTS/CCIA-BML AND FIELD VISITS SAMPLES COMBINED

COSTS

	Expected costs: moderate	Expected costs: high	Expected costs: excessive	Expected costs: excessive, requires substantial borrowing	Impossible, requires unaffordable relocation
Rendering external location and infrastructure adequate	66 %	12 %	4 %	7 %	12 %
Premises (internal building layout, drainage, sanitary, lighting)	72 %	15 %	5 %	1 %	7 %
Production equipment (sterilization, inspection, maintenance, calibration)	71 %	18 %	3 %	1 %	7 %
Clean water supply	83 %	9 %	1 %		5 %
Waste management and disposal including main sewage and water drain	83 %	9 %	1 %		8 %
Workers (health certificates, regular medical check-ups, personal hygiene)	82 %	11 %		1 %	7 %
Raw materials and additives compliance with norms and standards	75 %	15 %	5 %		5 %
Production procedures documentation	79 %	11 %	4 %		5 %
Implementation of a traceability system	79 %	12 %	4 %		5 %
Packaging and labeling compliance	80 %	13 %	1 %		5 %
Laboratory testing equipment and materials	78 %	15 %	3 %		5 %
Warehousing and distribution	79 %	8 %	5 %	1 %	7 %
Transportation	80 %	11 %	3 %		5 %
Food safety management cost	78 %	11 %	5 %	1 %	5 %
Cost of training	80 %	8 %	4 %	1 %	5 %

TIME FRAME OF COSTS

	Outlays: Less than 1 year	Outlays over: 1 to 3 years	Outlays over: 3 to 5 years	Outlays over: More than 5 years
Rendering external location and infrastructure adequate	34 %	45 %	13 %	8 %
Premises (internal building layout, drainage, sanitary, lighting)	55 %	32 %	9 %	4 %
Production equipment (sterilization, inspection, maintenance, calibration)	54 %	37 %	5 %	4 %
Clean water supply	68 %	25 %	4 %	3 %
Waste management and disposal including main sewage and water drain	57 %	36 %	4 %	4 %
Workers (health certificates, regular medical check-ups, personal hygiene)	67 %	25 %	1 %	1 %
Raw materials and additives, compliance with norms and standards	62 %	25 %	5 %	7 %
Production procedures documentation	50 %	38 %	7 %	5 %
Implementation of a traceability system	53 %	36 %	9 %	3 %
Packaging and labeling compliance	65 %	29 %	5 %	1 %
Laboratory testing equipment and materials	66 %	25 %	4 %	5 %
Warehousing and distribution	58 %	33 %	7 %	3 %
Transportation	65 %	28 %	7 %	1 %
Food safety management cost	57 %	32 %	9 %	3 %
Cost of training	62 %	28 %	8 %	3 %

I. T-TEST ANALYSIS OF THE CCIA-BML AND FIELD VISITS SAMPLES

		Levene's Test for Equality of Variances		t-test for Equality of Means					95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Workforce	Equal variances assumed	4.122	.046	.035	74	.972	.006	.184	-.360	.373
	Equal variances not assumed			.038	72.547	.970	.006	.168	-.329	.342
Surface	Equal variances assumed	32.395	.000	-2.598	74	.011	-.461	.177	-.815	-.107
	Equal variances not assumed			-2.907	68.404	.005	-.461	.159	-.777	-.145
Production scale	Equal variances assumed	22.144	.000	-2.035	74	.045	-.372	.183	-.736	-.008
	Equal variances not assumed			-2.287	67.396	.025	-.372	.163	-.697	-.047
Product lines	Equal variances assumed	9.124	.003	.698	74	.488	.128	.183	-.237	.492
	Equal variances not assumed			.768	71.776	.445	.128	.166	-.204	.459
Location and infrastructure	Equal variances assumed	.023	.880	-.803	74	.424	-.268	.334	-.933	.397
	Equal variances not assumed			-.793	61.709	.431	-.268	.338	-.944	.408
Premises	Equal variances assumed	8.644	.004	1.022	74	.310	.265	.260	-.252	.782
	Equal variances not assumed			.915	40.730	.366	.265	.290	-.320	.851
Equipment	Equal variances assumed	2.491	.119	.272	74	.786	.070	.256	-.440	.579
	Equal variances not assumed			.251	46.720	.803	.070	.277	-.487	.626
Water	Equal variances assumed	19.454	.000	2.028	73	.046	.444	.219	.008	.881
	Equal variances not assumed			1.711	32.682	.096	.444	.260	-.084	.973
Waste management	Equal variances assumed	27.801	.000	2.369	74	.020	.554	.234	.088	1.020
	Equal variances not assumed			2.018	33.381	.052	.554	.275	-.004	1.112
Workers	Equal variances assumed	6.364	.014	1.182	74	.241	.292	.247	-.200	.784
	Equal variances not assumed			1.076	43.828	.288	.292	.271	-.255	.838
Raw materials	Equal variances assumed	6.378	.014	.868	74	.388	.203	.234	-.263	.668
	Equal variances not assumed			.772	39.501	.445	.203	.263	-.329	.734
Production	Equal variances assumed	9.638	.003	1.338	73	.185	.308	.230	-.151	.766
	Equal variances not assumed			1.185	37.880	.243	.308	.260	-.218	.834
Traceability	Equal variances assumed	9.339	.003	1.278	74	.205	.292	.228	-.163	.747

		Levene's Test for Equality of Variances		t-test for Equality of Means					95% Confidence Interval of the Difference	
	Equal variances not assumed			1.124	37.804	.268	.292	.260	-.234	.818
Packaging	Equal variances assumed	14.129	.000	1.634	74	.106	.358	.219	-.079	.795
	Equal variances not assumed			1.409	35.003	.168	.358	.254	-.158	.875
Testing	Equal variances assumed	10.281	.002	1.296	74	.199	.292	.225	-.157	.740
	Equal variances not assumed			1.132	36.781	.265	.292	.258	-.231	.814
Warehousing	Equal variances assumed	10.818	.002	1.459	74	.149	.376	.258	-.138	.890
	Equal variances not assumed			1.302	40.262	.200	.376	.289	-.208	.960
Transportation	Equal variances assumed	12.448	.001	1.570	73	.121	.353	.225	-.095	.802
	Equal variances not assumed			1.376	36.277	.177	.353	.257	-.167	.874
Management	Equal variances assumed	4.745	.033	.835	74	.406	.203	.243	-.281	.687
	Equal variances not assumed			.755	42.513	.454	.203	.269	-.339	.745
Training	Equal variances assumed	6.946	.010	1.186	73	.239	.285	.240	-.194	.764
	Equal variances not assumed			1.071	41.276	.290	.285	.266	-.252	.823
Location and infrastructure-time	Equal variances assumed	22.345v	.000	.096	74	.924	.020	.210	-.398	.438
	Equal variances not assumed			.108	66.785	.914	.020	.186	-.352	.392
Premises- time	Equal variances assumed	2.862	.095	-.521	74	.604	-.100	.191	-.481	.282
	Equal variances not assumed			-.553	73.896	.582	-.100	.180	-.458	.259
Equipment-time	Equal variances assumed	1.379	.244	-1.419	74	.160	-.253	.178	-.608	.102
	Equal variances not assumed			-1.496	73.434	.139	-.253	.169	-.590	.084
Water- time	Equal variances assumed	2.225	.140	-2.183	74	.032	-.346	.159	-.662	-.030
	Equal variances not assumed			-2.196	65.901	.032	-.346	.158	-.661	-.031
Waste management-time	Equal variances assumed	.607	.438	-2.175	74	.033	-.374	.172	-.717	-.031
	Equal variances not assumed			-2.285	73.168	.025	-.374	.164	-.701	-.048
Workers- time	Equal variances assumed	.336	.564	-1.883	74	.064	-.334	.177	-.688	.019
	Equal variances not assumed			-1.960	72.119	.054	-.334	.170	-.674	.006
Raw materials-time	Equal variances assumed	2.250	.138	-.311	73	.756	-.067	.217	-.499	.364

		Levene's Test for Equality of Variances		t-test for Equality of Means					95% Confidence Interval of the Difference	
	Equal variances not assumed			-.336	72.136	.738	-.067	.201	-.467	.332
Production-time	Equal variances assumed	3.161	.080	-.338	74	.737	-.065	.193	-.450	.320
	Equal variances not assumed			-.361	73.998	.719	-.065	.181	-.425	.295
Traceability-time	Equal variances assumed	2.166	.145	-.861	74	.392	-.154	.179	-.511	.202
	Equal variances not assumed			-.905	73.136	.369	-.154	.170	-.494	.185
Packaging-time	Equal variances assumed	2.251	.138	-2.384	74	.020	-.356	.149	-.654	-.058
	Equal variances not assumed			-2.360	62.327	.021	-.356	.151	-.658	-.055
Testing-time	Equal variances assumed	.058	.810	-1.131	74	.262	-.213	.188	-.588	.162
	Equal variances not assumed			-1.191	73.404	.237	-.213	.179	-.569	.143
Warehousing-time	Equal variances assumed	.335	.564	-2.025	74	.046	-.342	.169	-.678	-.005
	Equal variances not assumed			-2.106	72.025	.039	-.342	.162	-.666	-.018
Transportation-time	Equal variances assumed	.985	.324	-1.784	74	.079	-.280	.157	-.592	.033
	Equal variances not assumed			-1.788	65.090	.079	-.280	.156	-.592	.033
Management-time	Equal variances assumed	1.190	.279	-.619	74	.538	-.112	.181	-.472	.248
	Equal variances not assumed			-.647	72.666	.519	-.112	.173	-.456	.232
Training-time	Equal variances assumed	.152	.698	-.953	74	.344	-.168	.177	-.521	.184
	Equal variances not assumed			-.988	71.661	.326	-.168	.170	-.508	.171

J. COMPARING THE TWO SAMPLES

PARAMETERS		N	Mean	Std. Deviation	Std. Error Mean
Workforce	Original	45	2.20	.919	.137
	Field	31	2.19	.543	.097
Surface	Original	45	3.38	.912	.136
	Field	31	3.84	.454	.082
Production scale	Original	45	3.47	.944	.141
	Field	31	3.84	.454	.082
Product lines	Original	45	2.29	.920	.137
	Field	31	2.16	.523	.094
Compliant with Lebanese standards	Original	42	1.50	.707	.109
	Field	31	1.03	.180	.032
Compliant with Codex	Original	37	2.46	1.260	.207
	Field	31	1.19	.543	.097
Applying HACCP	Original	38	2.79	1.189	.193
	Field	31	3.81	.543	.097
Applying GMP	Original	38	2.66	1.169	.190
	Field	31	2.84	.523	.094
Applying ISO	Original	32	2.38	1.314	.232
	Field	31	3.81	.601	.108
Member of SLFI	Original	26	1.19	.402	.079
	Field	28	1.07	.262	.050
Member of CCIABML	Original	42	1.02	.154	.024
	Field	31	1.00	.000	.000
Member of ALI	Original	32	1.13	.336	.059
	Field	29	1.10	.310	.058
Location and infrastructure	Original	45	4.02	1.390	.207
	Field	31	4.29	1.488	.267
Premises	Original	45	4.56	.755	.113
	Field	31	4.29	1.488	.267
Equipment	Original	45	4.49	.869	.130
	Field	31	4.42	1.361	.244
Water	Original	45	4.84	.424	.063
	Field	30	4.40	1.380	.252
Waste management	Original	45	4.84	.424	.063
	Field	31	4.29	1.488	.267
Workers	Original	45	4.71	.787	.117
	Field	31	4.42	1.361	.244
Raw materials	Original	45	4.62	.650	.097
	Field	31	4.42	1.361	.244
Production	Original	44	4.73	.585	.088
	Field	31	4.42	1.361	.244
Traceability	Original	45	4.71	.589	.088
	Field	31	4.42	1.361	.244

Packaging	Original	45	4.78	.471	.070
	Field	31	4.42	1.361	.244
Testing	Original	45	4.71	.549	.082
	Field	31	4.42	1.361	.244
Warehousing	Original	45	4.67	.739	.110
	Field	31	4.29	1.488	.267
Transportation	Original	44	4.77	.522	.079
	Field	31	4.42	1.361	.244
Management	Original	45	4.62	.747	.111
	Field	31	4.42	1.361	.244
Training	Original	44	4.70	.701	.106
	Field	31	4.42	1.361	.244
Location and infrastructure- time	Original	45	1.96	1.086	.162
	Field	31	1.94	.512	.092
Premises- time	Original	45	1.58	.917	.137
	Field	31	1.68	.653	.117
Equipment- time	Original	45	1.49	.843	.126
	Field	31	1.74	.631	.113
Water- time	Original	45	1.27	.688	.102
	Field	31	1.61	.667	.120
Waste management- time	Original	45	1.40	.809	.121
	Field	31	1.77	.617	.111
Workers- time	Original	45	1.31	.821	.122
	Field	31	1.65	.661	.119
Raw materials- time	Original	44	1.55	1.066	.161
	Field	31	1.61	.667	.120
Production- time	Original	45	1.64	.933	.139
	Field	31	1.71	.643	.115
Traceability- time	Original	45	1.56	.841	.125
	Field	31	1.71	.643	.115
Packaging- time	Original	45	1.29	.626	.093
	Field	31	1.65	.661	.119
Testing- time	Original	45	1.40	.889	.133
	Field	31	1.61	.667	.120
Warehousing- time	Original	45	1.40	.780	.116
	Field	31	1.74	.631	.113
Transportation- time	Original	45	1.33	.674	.101
	Field	31	1.61	.667	.120
Management- time	Original	45	1.53	.842	.126
	Field	31	1.65	.661	.119
Training- time	Original	45	1.44	.813	.121
	Field	31	1.61	.667	.120

K. ASSESSMENT OF THE REGULATION

	1	2	3	4	5	Score
To the majority of producers:	Very Clear	Clear	Reasonably Clear	Not Clear	Confusing	
The objectives of the regulation are	√					5
Regulatory obligations are perceived as being			√			3
Perception of benefits to be derived from the regulation is		√				4
	Very strong	Strong	Middling	Weak	Non-existent	
Producers' willingness to comply with the stipulations of the regulation is			√			3
Producers' expectations that enforcing ministries will be attentive to their interests are		√				4
Producers perception that chances of regulation's objectives will be met are			√			3
The government's will to enforce the regulation is perceived as being	√					5
The government's ability to enforce the regulation is perceived as being	√					5
Inter-ministerial cooperation and coordination in the application of the regulation is	√					5
	1	2	3	4	5	
	Very strong	Strong	Middling	Weak	Non-existent	
Possibility of producers misinterpreting regulatory obligations			√			3
Producers' lobbying for some modifications in enforcement procedure is			√			3
Producers' intention to legally challenge the enforcement of the regulation is					√	5
Producers' lobbying against the regulation is					√	5
Producers perception of uncertainty generated by the regulations is				√		4
Factors affecting government's ability to sustain enforcement of the regulation are perceived as being				√		4
	Very complicated	Intricate	Reasonably difficult	Simple	Non-existent	
Related issues that also need to be addressed through additional regulations are		√				2
External factors affecting ability to comply are		√				2
Conclusion: Regulatory failure is improbable						76.47%

Parameters	Explaining the parameters
THE REGULATION	
The objectives of the regulation	
Regulatory obligations	how clear are the requirements of the ministerial regulation
Perception of benefits to be derived from the regulation	how aware producers are of the advantages that the regulation offers
Producers' willingness to comply with the stipulations of the regulation	the extent of producers' readiness to adhere to the stipulations of the regulation
Producers' expectations that enforcing ministries will be attentive to their interests	the extent of producers' anticipation that ministries involved in the regulation will cooperate with them
Producers perception that chances of regulation's objectives will be met	the extent of producers' belief that the regulation will fulfill all the envisioned benefits
The government's will to enforce the regulation	the intention of the government implementing the regulation through inspections and constant monitoring, as seen by producers
The government's ability to enforce the regulation	the extent of the government's capability to employ the tools needed to ascertain the implementation of the regulation
Inter-ministerial cooperation and coordination in the application of the regulation	the strength or weakness of coordination and organization of the work and effort across involved ministries
Producers' lobbying for some modifications in enforcement procedure	through business support organizations such as Chambers of Commerce and the Syndicate of Lebanese Food Industrialists
Producers' intention to legally challenge the enforcement of the regulation	whether producers intend to go to court to legally suspend the implementation of the regulation
Producers' lobbying against the regulation	
Producers perception of uncertainty generated by the regulations	the extent of producers' indecision on the outcome of the regulation
Factors affecting government's ability to sustain enforcement of the regulation	such as the succession of ministers, lack of budgeting, number of inspectors
Related issues that also need to be addressed through additional regulations	such as zoning, tax exemptions, subsidized, long-term loans
External factors affecting ability to comply	such as the state of the infrastructure, and quality and compliance controls on imported products

L. ASSESSMENT SCALE

Interpretation of survey results	
Assessment scale	Explanation
Extent of impact	
Costs to:	
Established producers	
Substantial	75% and more of respondents perceive costs as being more than 80% of the value of their annual production or as being impossible to meet as they would require unaffordable relocation
Large	Between 51% and 74% of respondents perceive costs as being between 50% and 80% of the value of their annual production
Moderate	Up to 50% of respondents perceive costs as being up to 50% of the value of their annual production
Low	Between 51% and 74% of respondents perceive costs as being between less than 20% of the value of their annual production
Minimal	75% and more of respondents perceive costs as being less than 20% of the value of their annual production
Consumers	
Substantial	50% and more of respondents expected compliance costs to be reflected in higher prices for their products as well as those of their competitors
Large	Between 50% and 75% of respondents expected either a definite or a probable rise in product prices
Moderate	Between 50% and 75% of respondents expected either a definite or a probable rise in product prices or they were uncertain of the consequence
Low	Between 50% and 75% of respondents think increasing prices is out of the question or not probable
Minimal	50% and more of respondents think increasing prices is out of the question
Benefits to:	
Established producers	
Substantial	50% and more of respondents strongly agree on the benefits reaped upon compliance to the regulation
Large	Between 50% and 85% of respondents either strongly agree or agree on the benefits derived from the regulation
Moderate	Between 50% and 85% of respondents either strongly agree, agree or hold neutral stand towards the benefits derived from the regulation
Low	Between 50% and 85% of respondents either disagree or strongly disagree on the benefits derived from the regulation
Minimal	50% and more of respondents strongly disagree on the benefits reaped upon compliance to the regulation
Time frame	
Costs to:	
Producers	
Substantial	80% and more of respondents perceive the period over which costs of compliance would be incurred as being more than five years
Large	Between 60% and 79% of respondents believe it will take them up to five years to incur all costs of compliance
Moderate	Between 60% and 79% of respondents believe it will take them up to three years to incur all costs of compliance
Low	80% and more of respondents believe it will take them up to three years to incur all costs of compliance
Minimal	80% and more of respondents believe it will take them less than a year to incur all costs of compliance

M. EXPLAINING COSTS AND BENEFITS PARAMETERS

Parameters	Explaining the parameters	Justifying the assessment grade	
COSTS TO:		Extend of impact	Time frame
PRODUCERS			
Fixed costs			
Investing in new equipment	Render it compliant with quality standards (HACCP and GMP) imposed by regulation 950/1	Based on survey results	Based on survey results
Rendering production process compliant to health standards	Render it compliant with quality standards (HACCP and GMP) imposed by regulation 950/1	Based on survey results	Based on survey results
Rendering location and infrastructure adequate	Render it compliant with quality standards (HACCP and GMP) imposed by regulation 950/1	Based on survey results	Based on survey results
Premises (cleanliness, pollution control, safety)	Render it compliant with quality standards (HACCP and GMP) imposed by regulation 950/1	Based on survey results	Based on survey results
Setting up an adequate water supply	Render it compliant with quality standards (HACCP and GMP) imposed by regulation 950/1	Based on survey results	Based on survey results
Putting in place traceability systems	Required by imposed quality standards	Based on survey results	Based on survey results
Improving storage and warehousing facilities in line with health standards	Required by imposed quality standards	Based on survey results	Based on survey results
Variable costs			
Raw materials and additives	Compliance imposed by quality standards	Based on survey results	Based on survey results
Waste management	Required by imposed quality standards	Based on survey results	Based on survey results
Workers (health certificates, regular check-ups, personal hygiene)	Required by imposed quality standards	Based on survey results	Based on survey results
Monitoring traceability systems	Required by imposed quality standards	Based on survey results	Based on survey results
Use of adequate packaging	Required by imposed quality standards	Based on survey results	Based on survey results
Testing of raw materials and final products	Required by imposed quality standards	Based on survey results	Based on survey results
Maintenance of storage and warehousing	Required by imposed quality standards	According to Working Group discussions	According to Working Group discussions
Maintenance of equipments	Required by imposed quality standards	According to Working Group discussions	According to Working Group discussions
Maintenance of transportation	Required by imposed quality standards	According to Working Group discussions	According to Working Group discussions
Employing additional staff for quality management	Pre-requisite for the implementation of compliance	According to Working Group discussions	According to Working Group discussions
Training of existing staff	Pre-requisite for the implementation of compliance	Based on survey results	Based on survey results

Employing consultants	Pre-requisite for the implementation of compliance	According to Working Group discussions	According to Working Group discussions
Collecting and storing information required by regulation	Imposed by regulation 950/1	Mentioned by Ministry officials	Mentioned by Ministry officials
Management and control of compliance	Requirement of sustainable compliance	Based on survey results	Based on survey results
CONSUMERS			
Higher product prices		Based on survey results	Based on survey results
LOCAL RAW MATERIALS PRODUCERS			
Compliance of raw materials to the regulation	Required by imposed quality standards	Farmers will incur substantial costs to improve the quality of their production, especially with an underdeveloped and poorly regulated agricultural sector	Large time is needed for farmers to upgrade their production and render their products compliant with quality and health standards, especially with the lack of government financing to the primary sector
BUSINESS SUPPORT ORGANIZATIONS			
Specialized services to producers	Facilitating compliance process	According to the CCIA-BML	According to the CCIA-BML
Equipping laboratories run by Chambers of Commerce	Facilitating compliance process	According to the CCIA-BML	According to the CCIA-BML
Advisory services to producers	Facilitating compliance process	According to the CCIA-BML	According to the CCIA-BML
Involvement in third-party supervision	Facilitating compliance process	According to the CCIA-BML	According to the CCIA-BML
Lobbying and advocacy	Facilitating compliance process	According to the CCIA-BML	According to the CCIA-BML
MINISTRIES AND GOVERNMENT AGENCIES			
Supervision and administration	Cost inherent to implementation of the decision	According to Ministry officials	According to Ministry officials
Hiring and training of inspectors	Cost inherent to implementation of the decision	According to Ministry officials	According to Ministry officials
Building and maintaining adequate infrastructure	Pre-requisite for compliance of producers	According to Working Group discussions	According to Working Group discussions
Cost of allocating land for industrial zones	Facilitating compliance process	According to Working Group discussions	According to Working Group discussions
Cost of subsidies to farmers in contract farming scheme	Facilitating compliance process	If subsidies are to be provided for high quality agricultural production, as stated by Ministry officials, costs sustained by the government will rise with the increase in farmers efforts to produce compliant goods	Subsidies for farmers are ongoing efforts to support the agricultural sector and government will hence sustain these costs over a long period of time
Lower government revenues due to tax exemptions	Facilitating compliance process	As per the recommendations of Working Group members, the two zoning approaches adopted by IDAL and the Ministry of Industry are to be modified, so industries in broader and more remote areas benefit from tax exemptions.	In case tax exemption plan is amended, lost tax revenues would be permanently sustained by the government

Lower government revenues due to reduced customs duties on imports of raw materials used as inputs in F&B industries	Facilitating compliance process	In support of F&B industries, government agencies are considering lowering customs duties on imports of raw materials provided they do not compete with local production, according to Ministry officials	If this policy is put into practice, lasting losses in customs revenues are to be sustained by the government
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LABORATORIES

Investment in advanced testing equipment	Required by imposed quality standards	According to Ministry officials and Working Group discussions	According to Ministry officials and Working Group discussions
Reduce testing fees	Required by Ministry	Government agencies are currently working out agreements with public and private laboratories in order to reduce testing fees for F&B industries, as stated by Ministry officials	If this policy is executed, laboratories would permanently incur losses in revenues

ACADEMIC INSTITUTIONS

Resources dedicated to projects supporting producers	Facilitating compliance process	Based on the CCIA-BML past cooperation with academic institutions as well as on Working Group discussions	Based on the CCIA-BML past cooperation with academic institutions as well as on Working Group discussions
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INTERNATIONAL ORGANIZATIONS

Advisory support to producers	Facilitating compliance process	Based on the CCIA-BML experience in cooperation with international organizations and also based on Working Group discussions	Based on the CCIA-BML experience in cooperation with international organizations and also based on Working Group discussions
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Parameters	Explaining the parameters	Justifying the assessment grade	
BENEFITS TO ESTABLISHED PRODUCERS		Extend of impact	Time frame
Improved producer image	Certified through the health number for producing safe and healthy goods	According to Working Group discussions	According to Working Group discussions
Improved product image		According to Working Group discussions	According to Working Group discussions
Improved access to export markets	As an aftermath of products compliance with health and quality standards	Based on survey results and on trade statistics	According to Working Group discussions
Improved ability to compete with imports		Based on survey results	According to Working Group discussions
Increased local sales	As a consequence of better product image and higher consumer confidence	Based on survey results	Producers improving the safety and quality of their goods will benefit from increased local sales over a substantial period of time
Reduced product liability	Through improved hygiene and health standards	Based on survey results	In line with compliant production process, good quality management and constant reliable testing, producers would guarantee sustained reduction in product liability
Improved product quality		Based on survey results	
Reduce costs through a better control over inputs and reduction of defectuous products	By setting up traceability systems	Based on survey results	According to Working Group discussions
Improve workers' productivity	With a healthier and more competent workforce	Based on survey results	According to Working Group discussions
More efficient and less wasteful production process	Through setting guidelines to production process, conducting constant maintenance, implementing health standards	Based on survey results	According to Working Group discussions
Increased overall productivity		Based on survey results	According to Working Group discussions
Reduced costs arising from consignments being denied export market entry	Reduced market entry restrictions through better compliance with export markets conditions	According to Working Group discussions	According to Working Group discussions
Regulatory requirements render market entry more costly thereby curbing competition	Hence improving the local market position of industries in the F&B sector	If quality standards are enforced on imports, as proposed by Working Group members and industrialists in general, local producers would benefit from lesser competition from imports on local market	

Reducing unfair competition from hitherto unregulated and unregistered producers	The stipulations of the decision apply to all manufacturing facilities equally, be they licensed by the Mol or not	According to Working Group discussions	According to Working Group discussions
Tax exemptions (zoning)	To support industries efforts to adhere to the regulation, especially when relocation is required	As per the recommendations of Working Group members, the two zoning approaches adopted by IDAL and the Ministry of Industry are to be modified, so industries in broader and more remote areas benefit from tax exemptions.	In case tax exemption plan is amended, lost tax revenues would be permanently sustained by the government
Reduced customs duties on imported raw materials (provided they don't compete with local production)	Ministerial efforts to reduce production costs of the sector and improve its competitiveness	In support of F&B industries, government agencies are considering lowering customs duties on imports of raw materials provided they do not compete with local production, according to Ministry officials. If this policy is implemented, producers would lower their production costs and higher their competitiveness and profit margins	
Reduced testing fees	As part of ministerial initiatives to support industries	Government agencies are currently working out agreements with public and private laboratories in order to reduce testing fees for F&B industries, as stated by Ministry officials	If this policy is executed, laboratories would permanently incur losses in revenues
THE BUSINESS SECTOR AT LARGE			
Larger turnover in retails, hospitality and catering sectors	Improved image by serving high quality and safe products	According to Working Group discussions	According to Working Group discussions
CONSUMERS/ SOCIETY			
Safer products			
Cleaner environment			
Reduced health hazards		When health hazards are caused by product safety at the production level or by environmental degradation caused by F&B industries	Consumers will permanently enjoy less health hazards if continuous governmental monitoring is executed
Job creation:			
Ministries hiring of inspectors	In order to execute efficient inspections and monitoring	According to Ministry officials	According to Ministry officials
Consulting firms issuing certifications	In high demand by industries seeking compliance		
Producers hiring additional staff for quality management	Thus better job prospects for graduates and skilled labor	According to Working Group discussions	According to Working Group discussions

FARMERS			
MoA subsidy under contract farming scheme acting as incentive to improve produce	Governmental support for farmers to improve the quality of agricultural production		
MINISTRIES AND GOVERNMENT AGENCIES			
Favorable public perception of public administration	Appreciation of governmental efforts	Serious and transparent efforts that serve consumers wellbeing will be highly praised and appreciated by the public	Provided constant and efficient monitoring of quality standards is implemented by government agencies
Reduced spending on public health	Following less health hazards caused by F&B products	When spending is related to health hazards caused by product safety at the production level	Following the permanent reduction in health hazards
LABORATORIES			
More income from testing for compliance	As frequent testing is henceforth mandatory by the regulation	Increase in producers demand for testing is partially offset by reduction in testing fees, as promised by Ministry officials	Producers are compelled to execute constant testing for raw materials, additives and final products, hence the perpetual revenues gained by laboratories
ACADEMIC INSTITUTIONS			
Assistance from donor countries to finance support programs to F&B industry	Such as funding academic research and/or financing laboratories upgrade	According to Working Group discussions	According to Working Group discussions
INTERNATIONAL ORGANIZATIONS			
Favorable public perception and proper channel of resources	More efficient and transparent assistance to beneficiaries in the F&B sector	According to Working Group discussions	According to Working Group discussions

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الفوائد

أعارض كليًا	أعارض	محايد	أوافق	أوافق تمامًا	قيم الفوائد المكتسبة جراء الالتزام بالقرار:
٪٤	٪٧	٪٢٤	٪٢٧	٪٣٨	ترفيح الموقع التنافسي للشركة في أسواق التصدير
٪٤	٪١٨	٪٢٢	٪٤٠	٪١٦	زيادة المبيعات المحلية
	٪٤	٪١١	٪٤٤	٪٤٠	خفض المخاطر من خلال الالتزام بالمعايير الصحية
٪٩	٪١٦	٪٢٧	٪٢٧	٪٢٢	خفض التكاليف من خلال إحكام السيطرة على المدخلات والحد من المنتجات التي تشوبها العيوب
	٪١٣	٪٢٢	٪٣٨	٪٢٧	تحسين إنتاجية اليد العاملة (ترفيح كفاءة اليد العاملة والحد من حوادث العمل)
	٪١١	٪١٦	٪٣٣	٪٤٠	منتجات ذات نوعية أفضل
٪٢	٪١٨	٪٢٢	٪٣١	٪٢٧	تحسين الإنتاجية و الحد من الهدر
٪٤	٪١٦	٪٢٢	٪٤٢	٪١٣	زيادة الإنتاجية بشكل عام
٪٧	٪٧	٪٣٣	٪٢٧	٪٢٧	تحسين القدرة على منافسة المستوردات

القدرة التنافسية

كلا	غير محتمل	غير متأكد	محتمل	نعم	
٪٤	٪٢	٪٧	٪٣٦	٪٤٩	هل تتوقع أن ترتفع أسعار السلع التي تنتجها جراء الالتزام بالقرار؟
٪٤	٪٤	٪١٨	٪٣٣	٪٤٠	هل تتوقع أن ترتفع أسعار سلع منافسيك جراء الالتزام بالقرار؟
٪٤	٪٩	٪٢٢	٪٢٩	٪٣٦	هل تتوقع أن يتحسن موقع مؤسستك في السوق المحلية نتيجة الالتزام بالقرار؟
٪٢	٪١١	٪٢٢	٪٢٩	٪٣٦	هل تتوقع أن يتحسن موقع الشركات المنافسة في السوق المحلية نتيجة الالتزام بالقرار؟
٪١١	٪١٣	٪٣١	٪٢٢	٪٢٢	هل تتوقع أن تفوق الفوائد المكتسبة جراء الالتزام بالقرار تكاليف هذا الالتزام؟
٪٧	٪٢٠	٪٣٣	٪٢٧	٪١٣	هل تتوقع أن تفوق فوائد الشركات المنافسة الفوائد التي تتوقعها لمؤسستك جراء الالتزام بالقرار؟

كلفة الالتزام بالقرار

إستحالة تطبيق المعايير نظرًا لموقع المصنع و/أو البنى التحتية	الكلفة المتوقعة: مفرطة , تتطلب اقتراض	الكلفة المتوقعة: مفرطة	الكلفة المتوقعة: مرتفعة	الكلفة المتوقعة: معتدلة	
٪٥٨	٪١٦	٪٧	٪١١	٪٩	ملاءمة الموقع و البنى التحتية مع متطلبات القرار
٪٦٩	٪٢٠	٪٩	٪٢		قيم تجهيز المبنى (النظافة، الحد من التلوث، السلامة)
٪٦٤	٪٢٧	٪٤	٪٢	٪٢	المعدات (تعقيم، فحص، صيانة)
٪٨٧	٪١١	٪٢			إمدادات المياه النظيفة
٪٨٧	٪١١	٪٢			إدارة النفايات والتخلص منها بما في ذلك نظام الصرف الصحي
٪٨٢	٪١٣		٪٢	٪٢	العمال (شهادات صحية، حوص طبية منتظمة، النظافة الشخصية)
٪٧١	٪٢٠	٪٩			إلتزام المواد الأولية والمواد المضافة بالمواصفات والمعايير
٪٧٨	٪١٣	٪٧			مبادئ توجيهية لعملية الإنتاج
٪٧٨	٪١٦	٪٧			تطبيق نظام التعقب Bottom of Form
٪٨٠	٪١٨	٪٢			إلتزام عملية التغليف والتعليب بالمواصفات والمعايير
٪٧٦	٪٢٠	٪٤			معدات و مواد الفحص المخبري
٪٨٠	٪٩	٪٩	٪٢		التخزين والتوزيع
٪٨٠	٪١٣	٪٤			النقل
٪٧٦	٪١٣	٪٩	٪٢		التكاليف الإدارية
٪٨٠	٪٩	٪٧	٪٢		تدريب العمال

فترة الإنفاق على التغييرات المطلوبة التزامًا بالقرار

على مدى أكثر من خمس سنوات	على مدى ثلاث إلى خمس سنوات	على مدى سنة إلى ثلاث سنوات	على مدى أقل من عام واحد	
٪١٣	٪١٦	٪٢٤	٪٤٧	ملاءمة الموقع و البنى التحتية مع متطلبات القرار
٪٧	٪٩	٪٢٠	٪٦٤	قيم تجهيز المبنى (النظافة ، الحد من التلوث ، السلامة)
٪٧	٪٢	٪٢٤	٪٦٧	المعدات (تعقيم ، فحص ، صيانة)
٪٤		٪١٣	٪٨٢	إمدادات المياه النظيفة
٪٧		٪٢٠	٪٧٣	إدارة النفايات والتخلص منها بما في ذلك نظام الصرف الصحي
٪٤	٪٢	٪١١	٪٨٢	العمال (شهادات صحية ، فحوص طبية منتظمة ، النظافة الشخصية)
٪١١	٪٢	٪١٣	٪٧١	إلتزام المواد الأولية والمواد المضافة بالمواصفات والمعايير
٪٩	٪٤	٪٢٩	٪٥٨	مبادئ توجيهية لعملية الإنتاج
٪٤	٪٩	٪٢٤	٪٦٢	تطبيق نظام التعقب
٪٢	٪٢	٪١٨	٪٧٨	إلتزام عملية التغليف والتعليب بالمواصفات والمعايير
٪٩		٪١٣	٪٧٨	معدات و مواد الفحص المخبري
٪٤	٪٤	٪١٨	٪٧٣	التخزين والتوزيع
٪٢	٪٤	٪١٨	٪٧٦	النقل
٪٤	٪٩	٪٢٢	٪٦٤	التكاليف الإدارية
٪٤	٪٧	٪١٨	٪٧١	تدريب العمال



أهمّ المشاكل التي يواجهها القطاع

تواجه الصادرات اللبنانية صعوبات متزايدة في ولوج أسواق التصدير، إذ باتت معظم البلدان تفرض مواصفات ومعايير صارمة على مستورداتها. في هذا السياق يسعى القرار ١/٩٥ لتحسين الصادرات الصناعات الغذائية من خلال فرض الامتثال بالمعايير الفنية والصحية السائدة دولياً.

القرار رقم ١/٩٥

يفرض القرار ١/٩٥ شروطاً صحيةً وفنيةً على مصانع إنتاج المواد الغذائية. فبعد تقديم طلب التسجيل، يقوم فريق عمل مشترك من قبل الوزارتين المعنيتين بالكشف على المصنع إستناداً إلى جدول مراقبة محدد. يتمّ بذلك التأكد من إستيفاء عملية التصنيع شروط الإنتاج الفنية والصحية بما يتلاءم مع معايير وتوجيهات لبنانية وعالمية مثل تطبيق "نظام تحليل المخاطر ونقاط المراقبة الحرجة" (HACCP) بعد تحديد نتيجة الكشف، تمنح وزارة الزراعة المصانع التي تستوفي شروط القرار رقماً صحياً مما يُمكّن المصنع من عرض منتجاته في الأسواق اللبنانية. و في حال وجود مخالفات، يُعطى المصنع مهلة ثلاثة أشهر لتطبيق المعايير التي ينص عليها القرار.

من أبرز الفوائد الناتجة عن تطبيق هذا القرار هي تحسين سمعة المنتجات اللبنانية مما يسهّل وصولها إلى أسواق التصدير. كما يضمن إلتزام المصانع بالمعايير المحددة سلامة الغذاء الذي من شأنه تحسين نوعية المواد الغذائية المصنّعة حفاظاً على سلامة المستهلكين. وللبيئة حصة من هذه المنافع، فالإلتزام بالقرار يتضمن التأييد بالعديد من المعايير البيئية مما يحدّ من جميع أنواع التلوّث الناجمة عن هذه الصناعات.

المنتجون هم الأكثر تأثراً بالقرار من حيث التكاليف

يتحمل المنتجون العبء الأكبر من التكاليف المرتبطة بتطبيق القرار. وتتراوح تكاليف الإلتزام من معتدلة إلى مفرطة في حال تطلب الإلتزام بالقرار إنتقال المصنع الى موقع آخر لعدم ملاءمة الموقع والبنى التحتية فيه مع متطلبات القرار. تتضمن هذه النفقات تكاليف تجهيز المبنى والبنى التحتية بما يتلاءم مع المعايير التي حددها القرار، وتحديث الأجهزة، ونظم التخلص من النفايات، والصرف الصحي، بالإضافة إلى تكاليف مرتبطة بالفحوصات المخبرية لأدوات الإنتاج ومدخلاته. كما تتضمن التكاليف الإنفاق على تدريب الموظفين وتأمين سلامة العمال والإستعانة بخدمات استشارية.

الاستطلاع الخاص بدراسة أثر قرار وزارة الزراعة على الصناعات الغذائية

أعدّ مركز الدراسات الإقتصادية في الغرفة إستطلاع يهدف إلى التوصل إلى تقدير تقريبي لحجم التكاليف التي تقع على عاتق المنتجين جراء الإلتزام بالقرار، ورصد توقعاتهم لحجم المنافع المحتملة على صناعتهم، واستنباط مدى قدرتهم واستعدادهم لتطبيق القرار. كما ويسعى هذا الإستطلاع إلى معرفة إذا ما كان الصناعيون ينوون رفع أسعار منتجاتهم في حل عدم تمكنهم من تحمّل الأعباء المترتبة عليهم جراء الإلتزام بالقرار. ويسمح تقييم الأجوبة بتحديد مدى إرتباط حجم التكاليف المتوقعة بخصائص كل مصنع مثل حجم اليد العاملة، والمساحة التشغيلية، وقيمة الناتج السنوي وعدد خطوط الإنتاج.

الإستثمار

يتألف الإستبيان من ثلاث أقسام رئيسية. في القسم الأول، يقيّم المشاركون كلفة الإلتزام بالشروط المفروضة في القرار والمقسّمة إلى ١٥ فئة، كما يُطلب منهم تحديد مدة الانفاق على التحسينات المطلوبة. يهدف القسم الثاني إلى رصد تصوّر الصناعيين لقيمة المردود والمنافع المتوقعة جراء تطبيق القرار، فيما يسعى القسم الأخير للوقوف على توقعاتهم حول أسعار السلع المنتجة ومكانة الصناعات الغذائية في السوق المحلية بعد الإلتزام بالقرار.





دراسة وقع القرار رقم ١/٩٥ على الصناعات الغذائية في لبنان

اصدرت وزارتي الزراعة والصناعة في تشرين الثاني من العام ٢٠١١ القرار رقم ١/٩٥ الذي يفرض تسجيل مصانع إنتاج الغذاء وتنفيذ الرقابة الفنية عليها. وإنطلاقاً من دور غرفة التجارة والصناعة والزراعة في تمثيل ودعم مصالح القطاع الخاص، أعدّ مركز الدراسات الإقتصادية بتمويل من الوكالة الأميركية للتنمية الدولية USAID دراسة لتقييم وقع هذا القرار على الصناعات الغذائية في لبنان. ارتكزت الدراسة على تحليل وقياس المنافع والتكاليف المحتملة التي سوف تترتب على قطاع تصنيع الغذاء أثر إلزامه وتطبيقه لمتطلبات القرار.

تكمن أهمية الدراسة بأنها تساعد المتأثرين بالقرار، من صناعيين ووزارات ومؤسسات حكومية أن يدركوا الأثر الذي سوف يتركه هذا القرار على صناعة الغذاء في لبنان من حيث المنافع والتكاليف. كما أنها تقدم بعض الإقتراحات التي من شأنها أن تدعم جهود الصناعات الغذائية في الإلتزام بالمعايير المفروضة بالقرار لتحصد بذلك المنفعة القصوى لجهة تحسين نوعية منتجاتها وقدرتها التنافسية في الأسواق المحلية والعالمية.

تم تنفيذ الدراسة على ثلاث مراحل. حُدّدت أولاً جميع الجهات المستفيدة وتلك التي يُتوقّع أن تتحمّل التكاليف إزاء تطبيق القرار، وإن تمّ ذلك بطريقة مباشرة أم غير مباشرة. وضعت بعد ذلك لوائح شاملة عن المنافع والتكاليف المحتملة وأسند كل منها إلى الجهات المعنية فيها. إختصرت المرحلة الأخيرة من الدراسة على إجراء تقييم كمي للمنافع والنفقات الناتجة عن القرار.

بهدف تقييم آثار تطبيق القرار ١/٩٥ على مصنّعي المواد الغذائية، كان الإعتماد بشكل أساسي على إستطلاع قام به فريق عمل في الغرفة بهدف إستنباط تصورات أصحاب المصانع لحجم التكاليف المتوقعة جرّاء الإلتزام بالقرار.

ومن ناحية أخرى، ولضمان إجراء تقييم دقيق للقرار، كان من الضروري العمل عن كثب مع أصحاب الصناعات الغذائية وأعضاء نقابة الصناعات الغذائية ومستشارين وفريق USAID ضمن فريق عمل متعاون. وقد شكلت مساهمة فريق العمل ركناً أساسياً في سير الدراسة لما قدمه أعضاء الفريق من معلومات قيّمة حول الوضع الحالي للصناعات الغذائية في لبنان بالإضافة إلى آراء وتوقعات حول الآثار المحتملة للقرار على القطاع. كما أوضح فريق العمل موقف النقابة إزاء القرار وعرض عدة اقتراحات وتوصيات لدعم الصناعات الغذائية في ظل التغييرات التي باتت مفروضة عليها للإلتزام بالشروط الصحية والغذائية والحصول على رقم صحي.

إستناداً على نتائج الإستطلاع والإجتماعات المتعدّدة مع المعنّيين في القطاع بالإضافة إلى تصريحات رسمية وأرقام وبيانات متوفرة، قيّمت الدراسة أهمية المنافع والتكاليف التي سوف يتحملها أصحاب الشأن المتأثرين بالقرار. وبذلك، وصلت الدراسة إلى نتيجة مفادها أن الفوائد الإجمالية للإلتزام بالقرار الوزاري تفوق تكاليف تطبيقه، بفارق بلغ ١٦٪.

لم تشمل الدراسة الآثار التي لا يمكن تقييمها كمياً كالآثار الإجتماعية التي تتضمن مثلاً الصحة العامة والبيئة وبعض الفوائد التي يمكن أن تكتسبها الشركات مثل صورة و سلامة المنتج وسمعة الشركة.

أهمية قطاع تصنيع المواد الغذائية في الإقتصاد اللبناني

يؤثر القرار ١/٩٥ على إحدى أهم الصناعات اللبنانية وأكثرها توظيفاً لليد العاملة الصناعية والرساميل المستثمرة في الصناعة. تتصدّر صناعة المواد الغذائية باقي الصناعات بعدد من الجوانب منها:

١. تزيد قيمة إنتاج هذا القطاع عن ١,٧ مليار دولار، ما يشكل أعلى حصة من الناتج الصناعي الإجمالي (٢٥,٧٪).

٢. تشكل القيمة المضافة الناتجة عن القطاع ٢٦,٩٪ من القيمة المضافة الإجمالية للقطاع الصناعي وهي القيمة الأعلى بين الصناعات اللبنانية.

٣. يملك هذا القطاع الحصة الأكبر من الأصول الثابتة الصناعية وتبلغ ٣٠,٥٪ من المجموع.

٤. يستأثر قطاع تصنيع المواد الغذائية على العدد الأكبر من الشركات الذي يبلغ عددها ٧٣٦ مؤسسة بحيث تشكل ١٨,٢٪ من المؤسسات الصناعية.

٥. يتصدّر هذا القطاع باقي الصناعات في إستقطاب النسبة الأعلى من اليد العاملة الصناعية والتي تبلغ ٢٤,٩٪ من المجموع.

٦. على صعيد الصادرات، شكّلت الصناعات الغذائية في العام ٢٠١١ حوالي ٩,٤٪ من مجموع الصادرات متبوتاً بذلك المركز الثالث في لائحة أهم الصادرات اللبنانية.





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في بيروت وجبل لبنان of Beirut and Mount-Lebanon

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مركز الدراسات الاقتصادية

في غرفة التجارة والصناعة والزراعة في بيروت وجبل لبنان

بإشراف

ألبيير نصر

مدير مركز الدراسات الاقتصادية