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Strengthening Official Food Safety Control Services: Risk Management Approach - Imported Food Control - A Success Story

(Paper prepared by the Hashemite Kingdom of Jordan)

1. Introduction

Following Jordan's accession to the WTO in April 2000, fundamental restructuring was undertaken in food safety domain, namely issuing the first Food Act and adopting risk management approach within Jordan's strategic framework; Recognizing that the domestic food market very much depends on imports, a risk management approach was primarily to be implemented on food imports, arriving via the port of Aqaba where over 75% of imports are admitted to Jordan. The traditional imported food control system imposed a 100% sample collection and laboratory analysis on all food imports to Jordan regardless their health hazard, with no systematic product traceability nor recorded history on importers performance. The system was completely in a manual form, time consuming and without measurable tools to administer the official staff performance and trader's complaints and violations track. Minimal information was collected on handwritten sheets without any structured template forms to be filled out or electronically stored data for further statistical analysis for risk managers and policy makers.

2. Risk Based system Concept

Monitoring of imported food for compliance with national/international safety and quality standards and other requirements is based upon a risk management approach of control. The system places emphasis on those products determined to be high-risk food products in terms of human health based upon known and potential food hazards associated with these foods. Monitoring of lower risk or no risk food products will be maintained at a surveillance level to assure consistent compliance by importers, shippers and exporting enterprises. Such Risk Based System allows for some refinements and improved effectiveness to the food control process. It calls for an assessment of the risks associated with the known or potential hazards of food. This process takes into consideration before the control measures are applied, the nature of the hazards, and the impact on the consumer in terms of severity, which results in a clear idea of what should be examined for which types of hazards based on a priority system associated with the severity of the risk to the consumers. It allows for the allocation of resources to be clearly devoted to the most important areas of consumer protection. It enhances the effectiveness of the control measures by having a predetermined automated plan of what consignment entries will be sampled and what they will be tested for, while not spending scarce resources on entries which have little to no impact on the health of the consumer.

Recognizing Jordan's limited financial resources to undertake a full lengthy risk assessment, instead, a thorough benchmarking study was carried out referencing to various international organization researches and government risk assessments. The literature was studied by a national

specialized team, designed and structured with some refinements based on practical experience, climatic and further cautious criteria to acquire public acceptance.

Criteria based on the public health risk associated with various foods or other compliance or procedural factors were utilized to select food entries for appropriate monitoring, where food products have been categorized into three groups; High, Medium and Low–risk groups. Control is exercised electronically through the computerized Selectivity Module of the Automated System for Custom Data (ASYCUDA) which was massaged into a closed cycle to adapt food categories and their selectivity criteria. Food entries entered into the ASYCUDA system are identified by their Harmonized system-HS code for clear and accurate management by food control officials and importers throughout the clearance procedures.

For archiving and tracking purposes, a Food Import Management Information System (FIMIS) was engineered, programmed and deployed successfully on September 2002 as an information electronic archiving database to assist food officials in identifying risk areas and analyzing raw data utilizing Online Analyses Processing (OLAP) into a meaningful policy decisions, regarding the safety of imported food products.

The system will provide information useful in communicating and coordinating Jordanian activities with international efforts to improve the overall safety and quality of food trade, particularly in the region.

2.1 Food Categories Classification

Foods categories include those of high level of public health risk, those that represent a moderate level of risk and those that represent a low level of risk. High-risk foods will be monitored (sampling and analysis) at the highest level of surveillance, while moderate risk products will be monitored at a lower level of surveillance. Low risk products will be monitored at the lowest level of surveillance.

Food items have been classified for Health & Safety Control purposes in three categories based on the possible health risk associated with each food category. As demonstrated below; the first food category includes foodstuff items with the highest risk and exposure to contamination and the third food category includes foodstuff items with the lowest risk and exposure to contamination.

A) High risk food products:

1- Frozen novelties; Dairy and Milk and milk by-products; Fluid and Dried
2- Cheeses from pasteurized milk and Cheeses from un-pasteurized milk
3- Frozen Dairy products; Ice-cream and Processed Eggs; Liquid, Frozen and Dried
4- Products containing eggs; Mayonnaise
5- Bakery; Frozen and Ready to serve (i.e. Bakery & Cakes containing milk & eggs)
6- Yellow Cheeses; Cooked
7- Meat (incl. Poultry) products; Cooked, Dried, Smoked, Salted, Cured and Fermented.
8- Infant cereals, cereal-substitutes & Baby formula
9- Special food products; Dietary purposes
10- Nuts and nut products, Coconut; Flaked and Dried
11- Sesame, Sesame paste (Tahineh) and Peanut butter
12- Raw Vegetables; Pre-cut, Packaged
13- Raw, fresh Vegetables and mushrooms (e.g. tomato, eggplant; Preserved in oil.
14- Low acid foods; Retorted (e.g. Mortadella)
15- Acidified Low acid foods; Aseptic processing, modified atmosphere packaging

16- Low acid foods; preserved and semi-preserved (e.g. Exotic foods)
17- Marine products; Pickled, Spiced and Marinated (salted)
18- Ground raw Meat products (e.g. Sausages and hamburgers)
19- Marine products; Salted, Dried, Smoked, Cured & Fresh chilled, Frozen & Cooked
20- Meat (including Poultry) products; Raw fresh chilled & Frozen – including offal

B) Medium risk food products:
1- Chocolate; primary manufacture (from cocoa beans)
2- Bakery products; Ready to serve (i.e. not containing milk & eggs as dried crumbs)
3- Mineral, spring water; Bottled and Malt beverages
4- Chocolate (including all types) and Cocoa and cocoa derivatives
5- Milk and milk by-products; Liquid Condensed and Evaporated
6- Jams and Sugar Confectionary (i.e. Candies, Ha'loum and Halawa)
7- Food Supplements and Frozen novelties (non-dairy)
8- Coffee whiteners, whips and creams
9- Fruits fresh; Processed or Dried
10- Vegetables; Fresh, Dehydrated and Dried
11- Spices and Soups; Dried and Yeast and bacterial cultures
12- Mixes and bases; Dried (e.g. Cake mixes, Jelly, Custard and Caramel)
13- Eggs in shell (table serve) and Butter
14- Fillings and Toppings and Gelatine desserts and puddings; Dried
15- Flour and Starch, Chips and Breakfast cereals (e.g. Corn flakes)
16- High Acid foods; Retorted or hot filled or Aseptic processing (e.g. Ketchup & Mustard)
17- Biscuits, Wafers and Cakes and Chewing gum (all types)
18- Fruit Juices and Concentrates and Fruits; Dried (e.g. Dates and dry figs)

C) Low risk food products:
1- Carbonated Beverages
2- Coffee and Tea (all types and shapes)
3- Dairy products; Jameed
4- Sugar and sugar syrups, Honey and black honey and Molasses
5- Oils, Fats, Margarine and Butter blends
6- Fruits; Fresh and Frozen
7- Grains and grain derivatives (except flour)
8- Salt and Vinegar
9- Vegetables; Frozen and Beans
10- Alcoholic drinks and Distilled Liquors
11- Carbonated beverages concentrates, Flavour extracts and Food Additives
12- Pasta, spaghetti and couscous
13- Dried Herbs (e.g. mint & oregano)

* In cases where an imported food item is not listed in the above food categories, it shall be treated as a food item falling in the high risk category until a final classification is determined.

2.2 Selectivity Criteria and Levels of Inspection

- The national team worked alongside an international food trade consultant on setting the selectivity criteria taking into consideration a caution margin throughout the first few years of implementation and agreeing by consensus that the document review process will be mandatory regardless level of inspection.
- Selectivity criteria and Levels of Inspection based on the Food categories classification shall be:

- 80-100% of foodstuff consignments falling within Category One (high-risk category), shall be subject to inspection and sample collection for laboratory analysis.
- 25-50% of foodstuff consignments falling within Category Two (medium-risk category), shall be subject to inspection and 50% of foodstuff shipments subject to inspection shall be further subject to samples collection for laboratory analysis via an electronically programmed method.
- 5-10% of foodstuff consignments falling within Category Three (low-risk category), shall be subject to inspection and sample collection for laboratory analysis electronically.

Selectivity Criteria	Red Channel *Lab. Analysis*	Yellow Channel *Cargo Inspection*	Green Channel *Document Review*
High Risk foods	80-100%	--------	0-20%
Medium Risk foods	15-25%	15-25%	50-70%
Low Risk foods	5-10%	--------	90-95%

- Imported food entries that are subject only to document review and found to be satisfactory without cargo examination or sampling are expected to clear the health inspection requirements within one working day.
- Imported food entries that are subject to document review and cargo examination are expected to clear the health inspection requirements in three working days. Imported entries that arrive in containerized reefer shipments may require 2-3 additional working days in order to arrange for the cargo to be off-loaded for appropriate examination when necessary.
- Despite what has been stated concerning levels of inspection and sampling collection based on food categories, an additional 10% of all food consignments shall be subject to inspection via the Random electronic method, whereby sample collection for laboratory analysis from such consignments will be left for the decision of the "Inspection and Sampling Committee" based on the sensory inspection results.
- Pertaining to banned food that have been officially declared prohibited to enter Jordan will neither be inspected nor samples collected for consignment.
- Concerning automatically Detained food; i.e.
  1- Foodstuff items with evidence to continuous non-compliance with health and safety requirements
  2- Foodstuff items entering Jordan for the first time; where consignments will be subject to inspection and laboratory analysis for five successive shipments, and in case they were found in compliance with health and safety requirements, the detention will be lifted and foodstuffs will be subject to the regular risk-based food control inspection levels.
  3- Foodstuff items rejected from other countries.
  4- Foodstuff items that have been notified upon by other countries or related international organizations.

  Clearance of such foodstuff items will be carried out ONLY after compliance with conditions of document review, inspection and laboratory analysis results stating fitness for human consumption.

2.3 Incentives and Penalty scheme

Incentives for foodstuff consignments in compliance with health & safety requirements:

- In cases where five successive foodstuff shipments for the same food item classified in first, second or third category and obtained from the same manufacturer/source and have proved compliancy with health and safety requirements after being inspected and having passed laboratory analysis, then;
  - A- All foodstuff consignments shall be subject to inspection.
  - B- Sample collection for laboratory analysis purposes will be carried out on one consignment out of four consignments which have been inspected.
  - C- Same foodstuff item obtained from same manufacturer/source shall be given such benefit as long as it complies with health & safety requirements.

Whereas, where a foodstuff consignment was not found to be in compliance with health and safety requirements, then benefits given shall be withdrawn and the consignment will be subject to the regular risk-based food control inspection levels until evidence of compliance is proved for the next successive five shipments.

3. Implementation Phase-Action Plan

The risk–based food control system has been discussed and investigated thoroughly among all related national line authorities since September 2000 where the final approval of the system was issued by the National Food Council in July 2001.

A comprehensive, time bound implementation plan was prepared and accomplished covering the following main themes:

- Issue the first Food Law of Jordan which will adapt to the new system concept on December 2001;
- Construction of a refrigerated inspection food centre for reefer shipments examination and portion sample collection with suitable transportation vehicles to the food laboratory, where it was launched on 17 Nov. 2002 and has been able to host approx. 40% of the actual reefer containers;
- Substantial renovation of the existing food laboratory in Aqaba with newly installed equipment and sufficient training on quality assurance program and laboratory methodology of analysis working towards accreditation to ISO 17025;
- Renovation of ample office space for the food clearance center to serve all related national agency officials with required logistics at the Port zone where channeling, document review and all other paper procedures take place;
- Provide necessary portion field sampling equipment with practical training sessions and introducing the sampling number code concept;
- Unifying and harmonizing the health certificates required submission on port of entry according to food groups and Introducing a new concept of third party accredited single Health Certificate and E- certificate approval as beginning of year 2003;
- Revising and updating some of the national standards and regulations; i.e. Shelf life standards, sample size as well as the temperature for reefer cargos regulations;
- Develop a systematic unified form for the clearance procedures of all imported food consignments to be filled out by national line agency representatives;
- Develop risk channeling protocol with the associated food groups electronically utilizing tools of ASYCUDA software. Thus, enabling importer agents to file the entry forms electronically to be further assessed throughout the clearance procedures.

- Design and structure a database archiving system that captures all import data, certificates, test analysis results with statistical tools to enable data analysis for a solid based risk management system, providing sets of reports on various parameters.

The risk based imported food control system was officially launched at Aqaba port of entry on 20 May 2002 and extended to the rest of Jordan Borders of entry during 2004

4. Performance Assessment

- From 20 May 2002, where the risk based system for imported food control was officially launched, until 31 May 2004, imported food consignments were processed as follows:

Food Consignments	Value	Percent%	Timeframes (Day :Hr :Min)
Total Number of consignments	13970	100%	----------
Red channeled consignments	7927	55.0%	24:01:00***
Yellow channeled consignments	793	6.0%	05:20:00**
Green channeled consignments	5250	39.0%	01:14:00*
Number- Rejected consignments	50	0.36%	----------

* *50% of the Green channel shipments (Median) were cleared in (00:19:43)*
** *50% of the Yellow channel shipments (Median) were cleared in (03:02:05)*
*** *50% of the Red channel shipments (Median) were cleared in (20:24:44)*

- The main food types were meats, poultry and milk, dairy products, followed by grains, fish, fruits & vegetables
- Over 3026 reefer containers were inspected in the food inspection center (Nov 2002-31 May 2004)
- Activating an electronic certification programme for animal origin products; where over 145 electronic health certificates have been issued for meat products imported from New Zealand since 17 November 2003 and aiming to launch electronic certification of meat products with Australia mid July 2004. Thus, providing means of trustful and accurate documentation without the need of authorization from Embassies at country of origin
- Long before RBS for food imports was implemented; there was no capture of actual timeframes of consignments clearance. Thus creating many delays with no means of detecting the liability -whether on public or private sector- (with 100% sampling and laboratory analysis); clearance time frames varied between 10-30 days with blurred and fuzzy responsibility.

  Since the Launch of the RBS; set clearance timeframe were anticipated for each channel and following 18 months of real practical operation where officers are documenting channeling and final health clearance time by day and time (hour: minutes); ASEZA was able to gather raw data (during the period 1 January- 31 September 2003) and subject them to further statistical analysis on SPSS detecting the actual clearance timeframes highlighting spots of malfunction from both the public and private sector contributing to clearance delays and drawing a clear roadmap of accountability and responsibility of each stakeholder involved.
- Aqaba Special Economic Zone Authority has issued the SOP- Standard Operating Procedures- for all phases entailed with health clearance of imported food consignments. Additionally, drawing out the detailed procedural flow chart and publishing the “Food

Importers Guide" bilingual manual early 2004 - available electronically on www.aqabazone.com website.

5. Results and Conclusions

With the implementation of such a risk management approach for imported food control program, Jordan was able to:

- ⇒ Decrease by about 50% of redundant sampling and test analysis
- ⇒ Drop the amount of bulk samples into reasonable portions to fit the lab analyses
- ⇒ Reduce timeframes required for clearance of imported food consignments
- ⇒ Resources oriented towards enhancing inspection methodologies and proper field cargo examination, portion sampling and more thorough laboratory tests to assess the safety and quality of imported foods
- ⇒ Establish the first electronic national database information system to build a strong data collection, tracking records, well analyzed trends, enhanced reporting and notification with equal incentive-penalty program based on merit
- ⇒ Systemize transparent clearance procedures where stakeholders acknowledge their responsibility and accountability
- ⇒ Build a model for the region that can assist many developing countries to reach a risk management control approach with fairly reasonable resource allocation corresponding with globalization requisites

Jordan believes that risk management approach is the gateway towards a fair, transparent and merit-based treatment in the International food trade while maintaining science based decisions towards improved Consumer Safety & Quality Protection measures.