Safety Management Practices of New Entrepreneurs in Food Industry

Akshaya and Aarthy

==

Abstract

Food is considered as basic need for leading a life. Even Maslow's hierarchy of needs theory has stated this. For a food industry. Ensuring food safety is vitally important but problematic in the densely populated Asia-Pacific region because most food producers and processors are SMEs. SMEs are constrained by limited resources and a lack of expertise concerning food safety standards and management systems.

Key words: safety management, food industry, new entrepreneurs

Introduction

Food moves from farms to consumers via supply chains composed of multiple actors. Since safety hazards can enter the food chain at any stage from farm to fork, adequate control under ISO22000, a generic food safety management standard, is essential. ISO22000 integrates the principles of Hazard Analysis and Critical Control Point (HACCP) application steps developed by the Codex Alimentarius Commission. It defines general food safety requirements that should apply to all organizations regardless of size and anywhere in the supply chain regardless of the process involved. Therefore, combined efforts of all parties throughout the food chain is required. ISO22000 provides the frame-work for a harmonized food safety standard that is accepted worldwide.

The Chernobyl disaster highlighted the importance of safety culture and the effect of managerial and human factors on safety performance.[4][5] The term 'safety culture' was first

Engineering & Technology in India www.engineeringandtechnologyinindia.com
ISSN 2472-8640 1:5 December 2016
Dr. C. Swarnalatha, Ph.D. (Ed.) Entrepreneurship and Management:
Innovative Construction Techniques and Ecological Development. *Vol. 1 Management*
Akshaya and Aarthy
Safety Management Practices of New Entrepreneurs in Food Industry   1

used in INSAG's (1988) 'Summary Report on the Post-Accident Review Meeting on the Chernobyl Accident' where safety culture was described as:

"That assembly of characteristics and attitudes in organizations and individuals which establishes that, as an overriding priority, nuclear plant safety issues receive the attention warranted by their significance."

Since then, a number of definitions of safety culture have been published. The U.K. Health and Safety Commission developed one of the most commonly used definitions of safety culture: "The product of individual and group values, attitudes, perceptions, competencies, and patterns of behaviour that determine the commitment to, and the style and proficiency of, an organisation's health and safety management". "Organisations with a positive safety culture are characterized by communications founded on mutual trust, by shared perceptions of the importance of safety and by confidence in the efficacy of preventive measures."

Need for the Study

This study takes an initiative measure to provide an idea for the budding entrepreneurs in food industry to take a proactive approach regarding safety measures in that sector. The study investigates the effectiveness of a proactive approach designed to help small enterprises to set up and operate a simple health and safety management system. The approach is based on the introduction of a health and safety policy and risk assessment with the development of appropriate subsequent control measures.

Literature Review

In the study of "Implementation Of Food Safety Management Systems In the UK", Lena Dzifa mensah, Denyse Julien suggested in their findings that there is no significant effect of size of enterprise on the drivers, benefits and challenges to compliance with food safety regulation and their paper examines the response of food manufacturing enterprises to food safety regulation, and uses statistical techniques to investigate the effects of enterprise size on the

Engineering & Technology in India www.engineeringandtechnologyinindia.com
ISSN 2472-8640 1:5 December 2016
Dr. C. Swarnalatha, Ph.D. (Ed.) Entrepreneurship and Management:
Innovative Construction Techniques and Ecological Development. *Vol. 1 Management*
Akshaya and Aarthy
Safety Management Practices of New Entrepreneurs in Food Industry   2

drivers for, benefits of, and challenges to compliance. Further, the factors that influence the successful implementation of an integrated food safety management system are also examined. The results show a great deal of both statutory and private regulation that has incentivised enterprises. In response, enterprises have implemented integrated food safety management systems to proactively deal with the risks associated with food safety, however, enterprises claim that statutory regulations are biased towards consumers, without adequate impact assessments on all stakeholders within the chain, and hence causing industry to incur significant costs that could otherwise be avoided.

Another study "A Microbial Assessment Scheme To Measure Microbial Performance Of Food Safety Management Systems"   by L. Jacxsens ', J. Kussaga, P.A. Luning M. Van der Spiegel, F. Devlieghere, and M. Uyttendaele revealed that the objective of their work is to explain the development of a Microbial Assessment Scheme (MAS) as a tool for a systematic analysis of microbial counts in order to assess the current microbial performance of an implemented FSMS. It is assumed that low numbers of microorganisms and small variations in microbial counts indicate an effective FSMS.

In another study, "Food safety performance indicators to benchmark food safety output of food safety management systems" by L. Jacxsens , M. Uyttendaele, F. Devlieghere, J. Rovira, S. Oses Gomez and P.A. Luning, published in International Journal of Food Microbiology On Volume 141, Supplement, 31 July 2010, Pages S180–S18 it was told that there is a need to measure the food safety performance in the agri-food chain without performing actual microbiological analysis Validation was conducted on the basis of an extensive microbiological assessment scheme (MAS). The assumption behind the food safety performance diagnosis is that food businesses which evaluate the performance of their food safety management system in a more structured way and according to very strict and specific criteria will have a better insight in their actual microbiological food safety performance, because food safety problems will be more systematically detected. The diagnosis can be a useful tool to have a first indication about the microbiological performance of a food safety management system present in a food business.

Engineering & Technology in India www.engineeringandtechnologyinindia.com
ISSN 2472-8640 1:5 December 2016
Dr. C. Swarnalatha, Ph.D. (Ed.) Entrepreneurship and Management:
Innovative Construction Techniques and Ecological Development. *Vol. 1 Management*
Akshaya and Aarthy
Safety Management Practices of New Entrepreneurs in Food Industry   3

Introduction to Food Safety Management System

The Food Safety Management System (FSMS) provides a preventative approach to identify, prevent and reduce food-borne hazards. This is to minimize the risk of food poisoning and to make food safe for consumption. A well designed FSMS with appropriate control measures can help food establishments comply with food hygiene regulations and ensure that food prepared for sale is hygienic and safe for consumers.

With effect from June 2014, all caterers will be required to submit a proper Hazard Analysis Critical Control Point (HACCP)-based FSMS with reference to the Singapore Standard SS583:2013 as a basic guide. This is in accordance with the new requirement in the revised Code of Practice on Environmental Health (COPEH), where all new and existing caterers are required to implement a HACCP-based FSMS before obtaining or renewing their license.

To improve food hygiene standards in the food industry, NEA requires all new and existing caterers to implement an FSMS before obtaining or renewing their license.The Food Safety Management System (FSMS) is a programme that identifies and controls food safety hazards at every stage of food preparation through a holistic system of controls covering the following elements:

- HACCP (Hazard Analysis and Critical Control Points system) principles; A scientific and systematic approach to identify, prevent and reduce food-borne hazards in the food process chain.
- Pre-requisite programmes which are the basic programmes and practices that establishes and maintains a hygienic environment. (e.g. a daily regime to monitor food handlers' practices during food preparation, to screen staff to ensure those who are unwell are not to handle food, regular pest control regime and cross-contamination prevention procedures.)
- Efficient and accurate maintenance of documentation and records to ensure the efficient monitoring of FSMS and allow traceability of hazards to the contamination source

Engineering & Technology in India www.engineeringandtechnologyinindia.com
ISSN 2472-8640 1:5 December 2016
Dr. C. Swarnalatha, Ph.D. (Ed.) Entrepreneurship and Management:
Innovative Construction Techniques and Ecological Development. *Vol. 1 Management*
Akshaya and Aarthy
Safety Management Practices of New Entrepreneurs in Food Industry   4

From **1ˢᵗ June 2014,** all caterer licensees and new applicants are to comply with the following FSMS requirements

New Caterers

All new applicants for catering licences are required to submit an FSMS plan within the first three months of the licence issuance date.

Existing Caterers

Existing caterer licensees will have to submit an FSMS plan at least three months before their next licence renewal date, starting with licences expiring from 1ˢᵗ September 2014.

Training for All Caterers

All caterer licensees are required to appoint at least one staff of supervisory role per licensed premises (e.g. food hygiene officer, head chef or operations manager), preferably in-charge of day-to-day operations, to undergo and pass the course in "WSQ Apply FSMS for Food Service Establishments". Licensees are required to submit a copy of the Statement of Attainment (SOA) to NEA

ISO 22000 - Food safety management

ISO 22000 is a standard developed by the International Organization for Standardization dealing with food safety. It is a general derivative of ISO 9000.

The ISO 22000 family of International Standards addresses food safety management.The consequences of unsafe food can be serious and ISO's food safety management standards help organizations identify and control food safety hazards. As many of today's food products repeatedly cross national boundaries, International Standards are needed to ensure the safety of the global food supply chain. The ISO 22000 family contains a number of standards each focusing on different aspects of food safety management.

- ISO 22000:2005 contains the overall guidelines for food safety management.
- ISO 22004:2014 provides generic advice on the application of ISO 22000

Engineering & Technology in India www.engineeringandtechnologyinindia.com
ISSN 2472-8640 1:5 December 2016
Dr. C. Swarnalatha, Ph.D. (Ed.) Entrepreneurship and Management:
Innovative Construction Techniques and Ecological Development. *Vol. 1 Management*
Akshaya and Aarthy
Safety Management Practices of New Entrepreneurs in Food Industry   5

- ISO 22005:2007 focuses on traceability in the feed and food chain
- ISO/TS 22002-1:2009 contains specific prerequisites for food manufacturing
- ISO/TS 22002-2:2013 contains specific prerequisites for catering
- ISO/TS 22002-3:2011 contains specific prerequisites for farming
- ISO/TS 22002-4:2013 contains specific prerequisites for food packaging manufacturing
- ISO/TS 22003:2013 provides guidelines for audit and certification bodies

Hazard Analysis Critical Control Points (HACCP)

HACCP is a preventative food safety management system in which every step in the manufacture, storage and distribution of a food product is analyzed for microbiological, physical and chemical hazards.

HACCP can be critical to your compliance with national or international food safety legislation. It provides a risk management tool that supports other management systems standards across the food industry – such as ISO 22000 Food Safety Management. HACCP outlines good manufacturing processes for all food sectors and can be key to your business when taking part in international trade. It is especially suitable for primary producers, manufacturers, processors and food service operators.

This risk management tool is primarily used to manage food safety risks. A HACCP system allows you to identify hazards and put in place controls to manage these throughout your supply chain during production. The HACCP scheme meets the requirements of the Codex Alimentarius Commission (CAC) – established by the World Health Organisation and the Food and Agriculture Organisation of the United Nations to bring together international food standards, guidelines and codes of practice to ensure fair trade. It can also be used to support the requirements of management standard requirements, such as ISO 22000 Food Safety Management.

The benefits we obtain from HACCP

- Implement internationally recognised food safety hazard controls

- Demonstrate your commitment to food safety

- Give producers, stakeholders and suppliers confidence in your controls

- Align HACCP with ISO 22000 to improve food safety management systems

- Effectively manage food safety risks across the whole supply chain

- Continually review and improve your system so it stays effective

HACCP for SMEs

Food safety management is paramount to your business – whatever its size or location. And HACCP can add value to your entire supply chain with improved hazard controls. We understand that small companies may have less time and smaller budgets to work with. We also understand how to overcome these challenges with service packages tailored to your business. A customised HACCP package removes the unnecessary cost and complexity of achieving the right standards of food safety. So we can help you get to where you want to be as efficiently as possible.

How to Get Certified to HACCP

We make the HACCP certification process clear. After we have received your application we appoint a Client Manager who will guide you and your business through the following steps:

1. **Read the HACCP standard**

   To implement HACCP, you will need to get a copy of the standard so that you can understand your requirements. You can download the HACCP and GMP standard.

2. **Implement the HACCP standard**

   You can then implement the standard within your organization. This would include writing a HACCP Plan according to the standard's requirements. If you need assistance, you can attend our HACCP Requirements training course, which will not only teach you how to write a plan, but will help you develop a plan during the course.

3. **Gap analysis**

   This is an optional pre-assessment service where we take a closer look at your existing food safety management system and compare it with HACCP requirements. This

Engineering & Technology in India www.engineeringandtechnologyinindia.com
ISSN 2472-8640 1:5 December 2016
Dr. C. Swarnalatha, Ph.D. (Ed.) Entrepreneurship and Management:
Innovative Construction Techniques and Ecological Development. *Vol. 1 Management*
Akshaya and Aarthy
Safety Management Practices of New Entrepreneurs in Food Industry   7

helps identify areas that need more work before we carry out a formal assessment, saving you time and money.

4. **Formal assessment**

This happens in two stages. First we review your organization's preparedness for assessment by checking if the necessary HACCP procedures and controls have been developed. We will share the details of our findings with you so that if we find gaps, you can close them. If all the requirements are in place, we will then assess the implementation of the procedures and controls within your organization to make sure that they are working effectively in line with the standard.

5. **Certification and beyond**

When you have passed formal assessment you will receive a HACCP certificate, which is valid for three years. Your client manager will stay in touch during this time, paying you regular visits to make sure your system doesn't just remain compliant, but that it continually improves.

Integrate HACCP With ISO 22000

HACCP can stand alone as a management tool in your business. It can also be integrated with other management systems, such as ISO 22000 Food Safety Management. HACCP supports the implementation of ISO 22000 as they share common requirements for controlling food safety risks. This means you can streamline the way you manage and deliver common processes.

Application of Science to Food Safety Management

It is difficult to conceive of a food safety system that responds effectively and efficiently to emerging microbiological food safety concerns that does not permit rapid changes in approach based on advances in science. Flexibility to respond to new information and hazards will require unfettered data sharing. In addition, such a system cannot rely on the use of prescribed microbial control processes but instead must emphasize validation and verification of the control methods used.

1) **Risk Assessment**

Risk assessment is becoming a foundation for selecting food safety management options. Risk assessment is an iterative process, and assessments must be updated as additional information becomes available. Although essential, scientific data are a very substantial limiting factor in the application of risk assessment. Appropriate and aggressive data collection throughout the food production and processing system is essential for valid risk assessments and the resulting food safety improvements. Procedures must be implemented to obtain data from food manufacturers in "penalty-free" environments so the data can be properly evaluated by public officials and the results made available to all interested parties.

Risk Management

Regulatory agencies should work with other public health officials and interested parties, including industry and consumers, to establish Food Safety Objectives (FSOs). FSOs offer a means to convert public health goals into values or targets that can be used by regulatory agencies and food manufacturers. FSOs, which can be applied throughout the food chain, specify the maximum level of hazard that would be appropriate at the time a food is manufactured. FSOs would enable food manufacturers to design processes that provide the appropriate level of control and that could be monitored to verify effectiveness.

The FSO approach can be used to integrate risk assessment and current hazard management practices into a framework that achieves public health goals in a science-based, flexible manner. FSOs help translate the outcome of risk assessment into something that can be used with Hazard Analysis and Critical Control Point (HACCP) systems. The FSO approach will be successful when directly intertwined with a food processor's good manufacturing practices (GMPs) and HACCP systems.

Hazard Control and Monitoring

HACCP is a science-based food safety management approach that has been widely adopted and effectively applied to improve food safety. However, HACCP may not be appropriate for all circumstances. It is not possible to have a valid HACCP plan when a scientific analysis does not identify any point that meets the critical control point criteria. HACCP implementation must remain flexible to incorporate scientific knowledge and data in a product- and process-specific manner that best meets FSOs.

The application of HACCP to primary production is particularly limited, because all the HACCP principles generally cannot be achieved. Well-defined, science- based good agricultural practices should be further developed for specific commodities. Additional research will be necessary to better understand the microbial ecology in these agricultural environments and to formulate science-based recommendations for pathogen control. Routine microbiological testing is useful for some purposes but not for others. It can focus on pathogens of interest or on nonpathogenic microorganisms whose presence indicates conditions favourable to the presence of pathogens. Testing is useful for surveillance and HACCP verification purposes. It also is used for validating and revalidating control procedures.

Microbiological testing of finished product, however, can be misleading, because negative results do not ensure safety. Testing has statistical limitations based on the amount of product sampled, the percentage of product that is contaminated, and the uniformity of the

distribution of contamination throughout the food. As the amount of contamination in the food decreases, the food safety emphasis should focus on further controlling processing conditions through the application of science-based HACCP systems.

Foodborne Illness Surveillance

Human food borne disease surveillance will continue to be very important to: (1) identify outbreaks of food borne disease so they can be controlled and prevented; (2) determine the causes of food borne disease; (3) improve control strategies; and (4) monitor trends in occurrence of food borne disease. Comprehensive, coordinated surveillance activities must be expanded to include animal health and the production and processing environments. Further integrating animal and environmental surveillance systems into established human surveillance systems will increase our understanding of the epidemiology and sources of food borne disease.

Recognizing that food safety is a fundamental and continuing issue, the Institute of Food Technologists commissioned an expert panel to review the available scientific literature related to emerging microbiological food safety issues. The panel's report is divided into seven sections: Introduction, Pathogenicity, Human Hosts, Microbial Ecology, Application of Science to Food Safety Management, Next Steps, and Conclusions. Copies of the report are available at www.ift.org. Founded in 1939, IFT is a 28,000 member nonprofit scientific society for food science and technology.

Conclusion

Food is the basic necessity for all of us and we all earn money to get this basic necessity. We need to eat 3 meals a day to keep our body running so that we can manage our daily functions. Many of us "Eat food to live" while there are others who "Live to eat food". So food industry is the perfect choice for the new emerging entrepreneurs. The food they provide must be clean and hygiene and follow the above mentioned proactive approaches for the safety of the people for whom they manufacture. No compromises in quality of foods they produce will make them succeed in their career as entrepreneur.

===

References

1. Despande, R. and Ratna Reddy (1990): "Social Dynamics and Farmers Society: A Case Study of Pani Pan dhyats," Indian Journal of Agricultural Economics 45:3 p.356-61.

2. Duraippah, A. (1996) "Poverty and Environmental Protection: A Literature Review and Analysis." CREED working paper series No. 8, International Institute for Environment and Development, London.

3. FAO (2000) http: //www /fao.org.

4. G.S. Bist, Y.P.Singh & Sanjay Kumar (2005) http://www/ifpri.com

5. IFAD (2001) report form Andhra Pradesh Tribal Development Project, Asia and pacific Division/ IFAD, PCR.

IFAD (2001) report form Andhra Pradesh Tribal Development Project, Asia and pacific Division/ IFAD, PCR.

Akshaya and Aarthy
Department of Management Studies
K. L. N. College of Engineering
Route 47 C
Pottapalayam 630612
Sivagangai District
Tamil Nadu
India
prathimba2711@gmail.com

Engineering & Technology in India www.engineeringandtechnologyinindia.com
ISSN 2472-8640 1:5 December 2016
Dr. C. Swarnalatha, Ph.D. (Ed.) Entrepreneurship and Management:
Innovative Construction Techniques and Ecological Development. *Vol. 1 Management*
Akshaya and Aarthy
Safety Management Practices of New Entrepreneurs in Food Industry   12