

FAO/WHO Guidance document

**“Guidance to Governments on the Application of HACCP, in small
and/or less developed businesses”**

**DRAFT
NOT FOR CITATION**

**Food and Agriculture Organization of the United Nations
World Health Organization**

March, 2005

Printed 2005

The designations employed and the presentation of material in this information product do not imply the expression of any opinion whatsoever on the part of the Food and Agriculture Organization of the United Nations concerning the legal status of a country, territory, city or area or of its boundaries, or concerning the delimitation of its frontiers or boundaries.

ISBN (FAO)
ISBN (WHO)

All rights reserved. Reproduction and dissemination of material in this information product for education or other non-commercial purposes are authorized without any prior written permission from the copyright holders provided the source is fully acknowledged. Reproduction of material in this information product for resale or other commercial purposes is prohibited without written permission of the copyright holders. Applications for such permission should be addressed to the Chief, Publishing Management Service, Information Division, FAO, Viale delle Terme di Caracalla, 00100, Rome, Italy or by e-mail to copyright@fao.org

FAO 2005
WHO

2005

Contents

| | |
|---|----|
| FOREWORD | 1 |
| Chapter 1 | 3 |
| Background | 3 |
| Introduction..... | 3 |
| Role of Governments and potential benefits..... | 3 |
| Benefits to Food Businesses | 4 |
| The Codex Guidelines on HACCP | 4 |
| Exploring Approaches for HACCP in SLDBs | 5 |
| Objective of the document | 5 |
| Scope..... | 6 |
| Descriptive Terms..... | 6 |
| Potential users of the document – target audience..... | 7 |
| Chapter 2..... | 8 |
| Specifics of the small business sector and challenges it faces in all countries..... | 8 |
| Inadequate infrastructure and facilities..... | 9 |
| Lack of expertise and information | 9 |
| Psychological constraints..... | 10 |
| Inadequate basic hygiene | 10 |
| Human resource constraints (inadequate training, limited number of staff) | 10 |
| Perceived and real financial constraints..... | 11 |
| Insufficient government infrastructure and commitment | 11 |
| Absence of legal requirements (prerequisites and HACCP) | 11 |
| Lack of business awareness and positive attitude of industry and trade associations | 12 |
| Lack of customer awareness, including consumer awareness..... | 12 |
| Lack of effective formal education and training programs..... | 12 |
| Lack of expertise, information and/or technical support | 13 |
| Inadequate communications | 13 |
| Chapter 3..... | 14 |
| Development of a HACCP strategy for SLDBs within a national food safety policy..... | 14 |
| Introduction..... | 14 |
| Development of a strategy for HACCP implementation | 15 |
| Gather Information | 15 |
| Define the barrier(s) and identify their causes..... | 17 |
| Develop and select possible solutions | 17 |
| Draft strategy and consult widely | 17 |
| Conduct an assessment of the potential impact of the strategy | 18 |
| Modify and publish the strategy | 19 |
| Implement the strategy..... | 19 |
| Criteria for measuring success of the strategy | 20 |
| How to measure HACCP implementation..... | 20 |
| Indicators of successful HACCP implementation | 21 |
| Chapter 4..... | 22 |
| Strategic Activities to facilitate HACCP Implementation in SLDBs | 22 |
| Part A: Support activities | 22 |
| Provision of Financial Support | 22 |
| Provision of Guidance and Explanatory Information | 24 |
| Provision of HACCP Training..... | 25 |
| Voluntary Schemes | 26 |

| | |
|--|----|
| Mandatory Provisions and Enforcement..... | 26 |
| Provision of Technical Expertise by Consultants and Other Advisors..... | 28 |
| Part B : HACCP-based Approaches | 29 |
| Codes and Standards Documents..... | 31 |
| Generic HACCP-based Plans | 31 |
| Evolving HACCP-based Methodologies | 33 |
| Annex 1 | 34 |
| Overview of some national approaches to facilitate HACCP application in SLDBs..... | 34 |
| Ireland..... | 34 |
| United Kingdom | 35 |
| New Zealand..... | 37 |
| Canada | 40 |
| Netherlands | 42 |
| Brazil..... | 45 |
| South Africa..... | 46 |
| Thailand | 49 |
| References..... | 52 |

DRAFT

FOREWORD

The Hazard Analysis and Critical Control Point (HACCP) system has been adopted by the Codex Alimentarius Commission and guidelines to its application are provided in an Annex to the General Principles of Food Hygiene¹. During consideration of the draft HACCP standard (Rev.3.) at the 22nd session of the Codex Alimentarius Commission (Alinorm 97/37, paragraph 34) some delegations expressed their concern that difficulties might be encountered in applying the HACCP system in small businesses and in developing countries. Subsequently, the matter of barriers to HACCP application in small and/or less developed businesses (SLDBs) has been extensively debated in the Codex Committee on Food Hygiene (CCFH) between 1997 and 2003^{2,3,4,5,6,7}. There was also a Joint Food and Agriculture Organization of the United Nations (FAO) and World Health Organization (WHO) expert consultation in 1998⁸ and a WHO expert consultation in 1999⁹ that have addressed aspects of this topic.

At the 35th Session of Codex Committee on Food Hygiene (CCFH) in 2003, it was agreed that the FAO and WHO would develop guidelines on obstacles to the application of HACCP and approaches to overcome them in SLDBs. This request from member countries arose during the deliberations over the revision of the Recommended International Code of Practice: General Principles of Food Hygiene, including the Annex on HACCP and Guidelines for its application¹.

The Food and Agriculture Organization of the United Nations (FAO) and the World Health Organization (WHO) developed these guidelines with the collaboration of Dr. Wayne Anderson, Food Safety Authority of Ireland, who prepared the first draft of this document on request of both Organizations.

In order to give guidance to all stakeholders there is a need to pool the collective national and international experience in the implementation of HACCP systems in SLDBs. Consequently the FAO/WHO convened an electronic discussion group in 2004, of national experts with experience in this field. Members of the group exchanged views and shared information relevant to the subject and this resulted in the development of a first draft guidance document. This draft document was discussed and developed further at an expert meeting convened by FAO/WHO in Rome on 13th to 15th December 2004.

This document is the product of those discussions and contains an acknowledgement of the barriers facing SLDBs in their attempt to implement HACCP systems along with approaches to addressing them that have been tried and tested around the world. The document aims to provide the FAO/WHO member states with practical solutions to the implementation of the HACCP system in SLDBs.

PARTICIPANTS IN THE EXPERT MEETING, 13 – 15 DECEMBER 2004¹

Dr. Wayne Anderson, Chief, Specialist in Food Science, Food Safety Authority of Ireland, Dublin Ireland

Dr. Andrew Greaves, HACCP Project, Food Hygiene Implementation Division, Food Standards Agency, United Kingdom

Dr. Eunice Taylor, Director, International Centre for HACCP Innovation, Salford University, Manchester, United Kingdom

Dr. Alfred Bungay, National Manager, Inspection Systems and HACCP, Canadian Food Inspection Agency, Ottawa, Canada

Dr. Suwimon Keeratipibul, Representative of Food Industry Group, Federation of Thai Industries Assistant Professor, Chulalongkorn University, Bangkok, Thailand

Dr. Arvind Patil, Assistant Director, Export Inspection Agency-Chennai, India

Eng. Rima H. Zu'mot, Director, Food Control Aqaba Special Economic Zone Authority, Jordan

Dr. Tony Chamberlain, Marine Studies Program, University of the South Pacific, Suva, Fiji

Dr. Lucia Anelich, Head of Department, Biotechnology and Food Technology, Tshwane University of Technology, Pretoria, South Africa

Dr. Jairo E. Romero Torres, Director, Food Safety Program, Colombian Association of Food Science Bogotá D. C., Colombia

Dr. Antonio Tavares da Silva, Professor in Food Processing, Universidade Federal Rural do Rio de Janeiro/DTA, Rio de Janeiro, Brasil

THE JOINT FAO/WHO SECRETARIAT

Ezzeddine Boutrif, FAO

Maria de Lourdes Costarrica, FAO

Mary Kenny, FAO

Jaap Jansen, WHO

¹ Although unable to attend the Meeting, contribution was also made by **Dr. Jenny Bishop** Programme Manager (Technical Standards), New Zealand Food Safety Authority, Wellington, New Zealand

Chapter 1

Background

The Hazard Analysis and Critical Control Point (HACCP) system has been adopted by the Codex Alimentarius Commission and guidelines to its application are provided in an Annex to the General Principles of Food Hygiene¹. During consideration of the draft HACCP standard (Rev.3.) at the 22nd session of the Codex Alimentarius Commission (Alinorm 97/37, paragraph 34) some delegations expressed their concern that difficulties might be encountered in applying the HACCP system in small businesses and in developing countries. Subsequently, the matter of barriers to HACCP application in small and/or less developed businesses (SLDBs) has been extensively debated in the Codex Committee on Food Hygiene (CCFH) between 1997 and 2003^{2,3,4,5,6,7}. There was also a Joint Food and Agriculture Organization of the United Nations (FAO) and World Health Organization (WHO) expert consultation in 1998⁸ and a WHO expert consultation in 1999⁹ that have addressed aspects of this topic.

At the 35th Session of Codex Committee on Food Hygiene (CCFH) in 2003, it was agreed that the FAO and WHO would develop guidelines on obstacles to the application of HACCP and approaches to overcome them in SLDBs. This request from member countries arose during the deliberations over the revision of the Recommended International Code of Practice: General Principles of Food Hygiene, including the Annex on HACCP and Guidelines for its application¹.

This document aims to fulfil this request and provide the member states of the CCFH with practical solutions to the implementation of the HACCP system in SLDBs.

Introduction

The global burden of food-borne disease is difficult to estimate but data from WHO suggests that it is a significant contributor along with water to mortality from diarrhoeal disease (2.1 million deaths in 2000). In the USA, reports suggest that 30% of people suffer from food-borne disease annually. In developing countries there are no similar statistical estimates but the burden may be considered to be even greater. Improvements in the protection of public health rely on improvements in the safety of food. In this regard governments, the food industry and consumers have a shared responsibility to adopt the best practices of control of food safety hazards.

Role of Governments and potential benefits

In addition to adopting and ensuring compliance with national food legislation, governments should play an important role in actively promoting food safety measures through the adoption of quality assurance systems such as HACCP systems. The success with which food businesses establish and implement HACCP may be directly related to the supporting environment created by the government including alliances with food producers, this has been found to be particularly true in the case of SLDBs. Experience has shown that this group face very significant challenges when adopting HACCP which requires active interventions by the government to assist them. In most countries, the SLDB sector forms a substantial part of all

food businesses, contributing substantially to the national food supply. They are an important source of employment and contribute to local economies. Therefore, national policy to increase levels of food safety in this sector is of prime importance. At the same time, advocacy of the HACCP system, provides mutual benefits to the government, including safer food and hence increased public health protection which in turn may increase confidence of both national consumers and tourists. This combined with better opportunities to increase trade will result in economic growth and national development.

Benefits to Food Businesses

The HACCP system is recognised throughout the world as providing clear benefits to food businesses, enhancing the safety of food and preventing cases of food-borne disease. Benefits resulting from the implementation of HACCP systems have been identified^{4,10,30}. These include an increase in the confidence of owners and staff of SLDBs. Consequently, they are better equipped to engage in informed discussions on their food safety measures when in contact with food inspectors, third party auditors, consultants, trading partners, consumers and others. Because a HACCP system is essentially a management tool, the process of developing it can result in cost reductions to SLDBs in the medium and long term. These include a more efficient use of staff, provision of adequate documentation and reduced waste. Some businesses find that product consistency increases along with the increased level of process control that HACCP can accomplish. The improvement in product can have beneficial cost implications for the SLDB as it can increase access to some markets and attract more customers. The development of a HACCP system can also be a valuable team building exercise for an SLDB. It also has the ability to empower all staff when their input is sought and valued. This in turn can have a positive effect on the development of the SLDB as it demonstrates an ability to manage change. HACCP development also has more obvious benefits as it provides a basis for a defence against litigation, it can bring reduced insurance costs and allows an SLDB to access markets that are not available to businesses without HACCP systems in place.

The Codex Guidelines on HACCP

The Codex HACCP system¹ has several features that characterise it. Seven basic HACCP principles are established and then further elaborated into a logical sequence of twelve steps by way of guidance to their implementation. Guidance has been provided for the identification of critical control points (CCPs) in the form of a decision tree and an example of a HACCP worksheet demonstrates a possible layout for a documented plan. A strong concept is also enshrined in the guidelines which suggests that the HACCP system should not be implemented until a food business is operating in accordance with good hygienic practices (GHPs), and in compliance with appropriate food safety requirements. However, it should be acknowledged that the Codex HACCP system is the written product of experience gained in the application of HACCP systems in large and relatively technically sophisticated food businesses. Some governments implement the Codex system including the 12 steps as defined in the guidelines while other develop/promote systems, encompassing the seven principles, without specifically requiring the 12-step process. Further flexibility is not adopted often in recognition that the Codex HACCP system will be the reference standard in international trade disputes.

In recognition of this, the most recent version (Rev. 4, 2003) of the Codex HACCP system and Guidelines for its Application has been amended to be more accessible for SLDBs. Examples of amendments in Rev. 4 are:

- “Assemble HACCP team” (Step 1)
 - “Where such expertise is not available on-site expert advice should be obtained from other sources such as trade and industry associations, independent experts, regulatory authorities, HACCP literature and HACCP guidance’.
- “Describe product” (Step 2)
 - “Within businesses with multiple products, for example catering operations, it may be effective to group products with similar characteristics or processing steps for the purposes of development of the HACCP plan”
- “Establish documentation and record-keeping” (Step 12)
 - “Expertly developed HACCP guidance materials (eg. sector-specific HACCP guides) may be utilised as part of the documentation provided that those materials reflect the specific food operations of the businesses”
 - “A simple record keeping system can be effective and easily communicated to employees, it may be integrated into existing operations and may use existing paper work such as delivery invoices, and checklists to record for example product temperatures”

While these improvements provide added flexibility it is unlikely that on their own they will enable SLDBs to implement HACCP without further supporting initiatives to address the barriers that face SLDBs.

Exploring Approaches for HACCP in SLDBs

Confusion amongst food safety practitioners and food businesses alike in trying to implement the Codex HACCP system has led to partial or ineffective implementation of HACCP. Therefore systems have been developed with a more flexible approach and are usually referred to as ‘HACCP-based’ systems or ‘systems based on the principles of HACCP’. These systems are faithful to the seven principles of HACCP, but do not necessarily require the SLDB to follow the traditional 12-step approach as outlined in the Codex guidelines. There has been a significant shift in emphasis resulting in SLDBs to focus more on implementation of HACCP rather than development of a system from first principles, although all systems require some level of involvement of SLDBs in developing appropriate controls relevant to the business and in the interest of fostering ownership of the system.

Objective of the document

This document has been written to assist in the development of national policy, strategies and action plans aimed at improving food safety and trade through the application of HACCP in SLDBs throughout the world. The document aims to identify the barriers to the application of HACCP in SLDBs and provide some solutions based on the experience of experts engaged in tackling this problem in their countries. In this regard, flexible approaches to the implementation of HACCP will be described.

Scope

This document will be concerned with the elaboration of approaches that could be adopted by national governments to improve food safety and trade by facilitating HACCP application in SLDBs. The needs of larger more technically advanced food businesses will not be considered. The information provided will be applicable to SLDBs engaged in food processing and preparation, distribution and storage, wholesale, retail and catering activities. However, whilst not specifically aimed at primary food production (animal husbandry and agronomic activities on the farm) it is possible that some of the experience captured here could help governments aiming to apply HACCP-based systems at farm level.

The document will deal with the appropriate activities of national governments that may be necessary to enable them to develop national policy, strategy and action plans. It is not intended to directly provide solutions to the owners of SLDBs to help them implement HACCP in their own food businesses. However, adaptations of the Codex HACCP system that have been used by national governments will be presented briefly for further research by interested parties. Throughout the document, it is stressed that the solutions provided need to be adopted and tailored taking into account national circumstances, as no single solution is the optimum choice in all situations.

Descriptive Terms

For the purposes of this document, the following terms were agreed:

| | |
|-------------------------------|---|
| Good Hygienic Practices | All practices regarding the conditions and measures necessary to ensure the safety and suitability of food at all stages of the food chain |
| Codex HACCP system | A system which identifies, evaluates and controls hazards which are significant for food safety that is described in the Annex to the Codex General Principles of Food Hygiene ¹ |
| HACCP-based systems | A system that is consistent with the seven principles of HACCP but does not conform to the layout or steps of the Guidelines for the Application of the Codex HACCP system. |
| Food Safety Management System | A holistic system of controls that manage food safety in a food business. Includes the pre-requisite system, the HACCP system, management policies and traceability/recall systems |

Potential users of the document – target audience

This document is directed towards national governments responsible for the development of national policy aimed at the application of HACCP in SLDBs , as well as those likely to provide advice on national policy development, (e.g. government officials, food industry associations, consultants, auditors trainers/education specialists etc.). However, it is recognised that other groups of people may also use this document such as food business managers and food enforcement officers.

DRAFT

Chapter 2

Specifics of the small business sector and challenges it faces in all countries

The size of the food industry in most countries is significant and in some it accounts for the highest proportion of the gross domestic product (GDP). For instance, in 2002 India's food industry was valued at 75 billion dollars, and accounted for 30% of the GDP¹¹. Frequently, small businesses represent the majority of food enterprises and are responsible for a large share of the food consumed in a country. For example, in 2002 Thailand reported a total of 57,217 factories in the food industry consisting of small, medium, and large-scale plants where only 1% or 444 factories were considered large, 3% or 1,763 were medium and up to 96% or 55,010 of the factories were classed as small-scale plants¹². Small food businesses also provide a significant proportion of the total employment in the food sector and make a vital contribution to the economic well being of the community at local level. Statistics available in the UK suggested that 99% of food businesses were small companies employing 50% of the total food industry workforce and contributing to 38% of the food industry turnover¹³. In other countries, not specifically referenced here, it is considered that the proportion of SLDBs is similar, including developing countries.

It is incumbent on any national government to maintain and develop the health of its indigenous small food businesses whilst protecting public health. In this regard it is important that national governments develop food safety policy and strategy for the implementation of HACCP in SLDBs. Even though they do not often export food, they have a large impact on local and regional economies and have a potentially immense impact on the health of local consumers and therefore national public health.

It is common in most countries to classify SLDBs only by size using economic measures like turnover and number of employees. In 2001 Taylor¹⁰, introduced the concept of defining small businesses by the qualities that they generally share. She observed that they served local customers, had a limited share of the available market; were owned by one person or by a small group of people and were mostly owner managed and independent of ownership by larger groups of companies. This approach provides a more focussed definition of the types of businesses that need help in implementing HACCP. However, it is also important for governments to consider the level of development and expertise that a food business may have. In its broadest sense the term SLDB's, whilst encompassing small businesses, will also include larger businesses that lack the ability to develop effective food safety management systems.

Therefore, for the purposes of this document the term SLDB is taken as the definition adopted in the report of WHO Consultation on 'Strategies for Implementing HACCP in Small and/or Less Developed Business' in 1999⁹ and was introduced to the CCFH in 1999⁴:

"The term 'small and/or less developed businesses' (SLDBs) shall mean businesses that because of their size, lack of technical expertise, economic resources, or the nature of their work, encounter difficulties in implementing HACCP in their food business. The term 'less developed business' refers to the status of the food safety management system and not to the number of staff or volume of production."

The strategies and approaches described later in this document (ref. Chapters 3, 4, 5) are applicable to both small and less developed businesses. Particular national circumstances will dictate which approaches are the most appropriate to which type of business. In this regard, it is also important for national governments to recognise the obstacles that may face SLDBs in the implementation of HACCP. Not all barriers will apply in all countries and their relative importance will also differ. A complete understanding of the barriers to HACCP implementation in SLDBs will allow national governments to develop better policy and select the most appropriate solutions to address in their strategy (ref. Chapter 3). Often, at first glance the barriers facing the facilitation of HACCP implementation in SLDBs may seem daunting, and while a thorough understanding of them is important, governments should not be deterred from progressing towards developing solutions. This is important because there are clear benefits to the implementation of HACCP in SLDBs (see Chapter 1).

The obstacles to the application of HACCP in SLDBs were discussed in detail at the 35th session of CCFH⁷ and will be summarised here to maintain continuity. However, in addition to these, recent publications (including the FAO Country Case Studies on HACCP Application) and discussions within the FAO/WHO electronic discussion group and during the expert meeting held in Rome, December 2004 have also shed light on additional HACCP barriers and these findings were added to the summaries below introducing new headings where necessary.

Inadequate infrastructure and facilities

For many SLDBs the implementation of HACCP brings with it additional costs in upgrading facilities before the system is even applied. National experiences show that this can be an insurmountable barrier for some SLDBs without the provision of support from governments and/or trade associations. In addition, the local infrastructure, power, water, sewage disposal, transport facilities can hamper the hygienic management of SLDBs which uniformly lack resources to provide on site solutions (e.g. sewage treatment). Again, governments have an undeniable role in resolving these difficulties.

Lack of expertise and information

The owners and operators of SLDBs do not lack enthusiasm or commitment to ensuring food safety however, because of their immersion in the day to day running of their businesses they are often unaware the importance of HACCP or even the concept itself. Even if they know about HACCP they often lack the technical competence and business skills that allows them to operate an effective pre-requisite programme and set up a HACCP system as envisaged in the Codex Alimentarius guidance¹. National surveys have noted that even with several years of government promotion of HACCP there remains a significant number of SLDBs that are ignorant of the concept^{14,15}. Additionally, those businesses which have heard of HACCP are often 'swamped' by the technical jargon surrounding the concept which in itself is a barrier to clear communication and acceptance of the benefits of HACCP. Even apart from these issues most people in SLDBs are not technically skilled enough to conduct a meaningful hazard analysis and since this is an early step in the implementation process the size of this barrier alone can cease the process in its tracks.

Psychological constraints

Part of the challenge of implementing HACCP in SLDBs is enacting behaviour change. Behaviour is deeply rooted in a person's psyche and it is sometimes essential to understand psychological constraints on people in SLDBs faced with implementing HACCP. Gilling *et al* (2001) used a medical model to examine this barrier to HACCP implementation in different sized food businesses¹⁶. Their findings suggest that more barriers to HACCP implementation were perceived by SLDBs than larger businesses. All companies recognised customer demands and time/cost pressures as barriers and all seemed to exhibit a lack of motivation and a belief that HACCP would not necessarily make a difference in their own business. However, in SLDBs alone, psychological constraints like lack of self-efficacy (belief that a person has the capability of organising and executing a course of action); inertia (inability to overcome the habit of previous practice due to lack of desire to change) and agreement (cannot see how HACCP can deliver safer food in their premises) were additional barriers. These latter two factors are often deep rooted in the belief by the owner that the SLDB is already producing safe food without a HACCP system. Many of the psychological constraints have been inadequately addressed and passed off as a 'lack of management commitment' which is a phrase often seen in HACCP literature.

Inadequate basic hygiene

This barrier concerns the apparent lack of good hygienic practices which is a more prominent feature of SLDBs in general than in other food businesses. It is common for SLDBs to have problems like inadequate layout or size of facility, non-cleanable structures and/or old non-cleanable equipment and insufficient training of staff. Some countries face basic sanitation problems such as easy access to potable water and safe disposal of waste and garbage that affect implementation of food hygienic practices and HACCP based systems. These features undermine the operation of an effective pre-requisite programme making HACCP more difficult to implement with any real effect on hazard control. However, strict adherence to the dogma that HACCP cannot be implemented without full control over the pre-requisites has also impeded the uptake of HACCP in SLDBs.

Human resource constraints (inadequate training, limited number of staff)

SLDBs are as a rule constrained by the requirement to maintain tight control over their costs. Consequently there is rarely an excess of manpower in these businesses that are not vital for the day to day operation of the business. This problem often prevents resource allocation for the implementation of HACCP systems and also curtails the amount of training that staff receives (other than on-the-job training). In some sectors there is a concomitant rapid turnover of staff or a tendency for staff to work on short temporary contracts. Neither of these situations lend themselves to investments in time and training of staff for HACCP purposes. This is also sometimes criticised as lack of management commitment to HACCP but may not necessarily be an attitude problem, but rather because human resources in SLDBs are a scarce commodity.

Perceived and real financial constraints

Financial constraints are a practical barrier to implementing HACCP felt by governments and industry alike and this barrier can be particularly acute in SLDBs. These constraints can mean that the provision of assistance by government and assistance by trade associations is not as comprehensive as might be necessary to affect change. The potential savings that good hazard control in the food industry might deliver for governments, like lower public health costs and reduced workplace absenteeism are rarely appreciated and used to offset initial financial investment

The costs associated with HACCP can be daunting for SLDBs and may be perceived to be higher than they actually are. Staff time is also a real cost for SLDBs and the time investment necessary for training and subsequent implementation can cause severe difficulties for the day-to-day running of an SLDB. Again, it is rare for them to consider the potential long term savings that a good HACCP system can accrue. Not least of these is protection against harm to the consumer and potential litigation that can follow food poisoning incidents. In some cases it may be further compounded by the fact that there is a lack of evidence on the cost-benefit of the HACCP system.

Insufficient government infrastructure and commitment

To create momentum for the move towards HACCP systems in SLDBs, national governments and their associated agencies and bodies must be committed to the process. External and internal commitment is one of the most important factors in the development and implementation of a successful HACCP initiative in SLDBs. Insufficient government commitment, inadequate professional knowledge of HACCP, poor coordination within government structures and/or inconsistency in HACCP enforcement or application are not conducive to the creation of a food safety culture in which HACCP can thrive. In this respect, one of the most important tasks of governments is to consistently raise the awareness of industry to the benefits of and the need for introducing HACCP to produce safe food. Governments should also strive to develop the competencies of their own staff who will be involved in directing the course of HACCP introduction in SLDBs.

Absence of legal requirements (prerequisites and HACCP)

A legal requirement to apply the HACCP system, combined with proper enforcement, can be a strong stimulus to promote HACCP implementation in many SLDBs. Clearly, the presence of a legal requirement is not sufficient on its own to stimulate all the owners of SLDBs into affirmative action but it can be considered as part of a framework to promote HACCP implementation. However, in drafting legal provisions with respect to HACCP, experience with SLDBs would indicate that the nature of the system should not be rigidly described to the extent that it hampers flexibility and the ability of an SLDB to apply the system to their business. It should also be noted that legal HACCP is not a necessity, it is a matter of national policy and will work in some countries/cultures and may be not at all in others. Any legal requirement should attempt to work in tandem with existing initiatives that may be led by the food industry itself.

Lack of business awareness and positive attitude of industry and trade associations

Market forces and export requirements have been key to the implementation of HACCP in many food businesses. The implementation of food safety management systems incorporating HACCP can be a prerequisite to market access. This is particularly evident if businesses are export oriented or supply into large retail multinational businesses. However, many SLDBs only supply domestically and there is no significant presence of large multinational retailers in some countries. The absence of these factors has played a particular role in the reluctance of SLDBs in the catering and other sectors to implement HACCP. Similar drivers are also missing for any SLDB supplying locally direct to consumers or local retailers and caterers. Trade associations have a role to play in promoting HACCP but these organisations are missing in many countries and even when they are present, SLDBs are more likely to be under-represented on these bodies compared to larger food businesses.

Lack of customer awareness, including consumer awareness

Many SLDBs are customer focused whether they are conscious of this or not. Indeed, many SLDBs have direct contact with consumers in a way that larger businesses cannot achieve. Therefore, the consumer can be a very strong driver for change but when customers (and consumers) do not perceive food safety as an issue of fundamental importance it is less likely that SLDBs will respond by implementing HACCP. Government and international organisations have an important role in educating consumers in this regard. The mass media can exert a powerful influence in educating consumers, promoting the demand for safe food and appropriate control systems. However, it may also have a negative effect, if not handled properly and the journalists are not appropriately informed.

Food safety should form an important part of business-to-business dealings throughout the food chain. As such, businesses should ensure that they purchase food (raw or intermediate) from other businesses that implement HACCP systems. This should, in conjunction with better-informed consumers, create a demand and strong driving force to undertake improvements in food safety.

Lack of effective formal education and training programs

One of the most important elements of successful HACCP implementation is an understanding of the concept by food business owners or managers. Their understanding and commitment is crucial to the effective operation of HACCP by other staff. HACCP training courses and integration of HACCP in university curricula is now widespread but was not always, and therefore many business owners who have not undertaken any formal training may not have been exposed to HACCP or have received relatively cursory instruction. In addition, HACCP is still largely taught by theorists in the formal education system and hence the Codex HACCP system is often rigidly adhered to and practical implementation issues are not always covered.

SLDBs have particular requirements in this area. The processes in their businesses whilst simple can vary considerably between seemingly similar businesses. Hence, training must take account of this diversity and needs to move away from the 'one size fits all' concept. In addition, literacy levels can be lower for staff in SLDBs and consequently training must be tailored to account for this and may have to be more practical (demonstration) than theoretical.

The challenges may be further compounded where there is a high turnover of staff which is common in many SLDBs. In some countries SLDBs are family run enterprises that are passed down through the generations and employ traditional methods of food production. Many workers and managers of these businesses may not be trained in even basic food hygiene and hence training for these SLDBs may need to include all relevant hygiene aspects instead of simply targeting HACCP. In short, new training approaches need to be developed to meet the specific needs of SLDBs.

Lack of expertise, information and/or technical support

As discussed previously, SLDBs often lack the technical expertise required to implement HACCP alone and may therefore need external support. In particular, SLDBs are in need of specific help in identifying the hazards associated with their food processes and this needs to be provided in a readily accessible and understandable form. Expertise is expensive to acquire and this alone is a barrier to SLDBs. It is also evident from national experiences that SLDBs often lack the capacity to differentiate between good and bad experts. In countries where expertise is readily available through consultants, SLDBs can often be misguided where the quality of advice is poor, and no steps are in place to assure the standard of advice given by consultants. In these countries and in other countries where this form of expertise is rare, governments and industry/trade associations have a significant role to play in providing adequate, accessible technical support for SLDBs.

Inadequate communications

Inadequate communications between governments, industry and consumers can impede the introduction of HACCP. Communication strategies, covering the content of the communication as well as the channels for communication, need to be part of any HACCP policy or strategy. Often the only point of official contact with SLDBs is through the official inspector and if these people are not resourced, trained and allowed to provide advice as well as conduct official inspections it can hamper the implementation of a national strategy aimed at increasing HACCP implementation.

Chapter 3

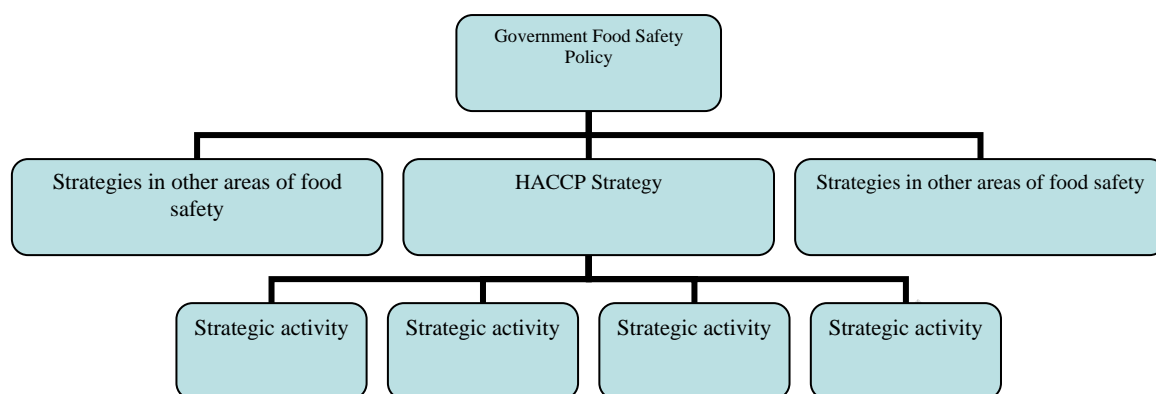
Development of a HACCP strategy for SLDBs within a national food safety policy

Introduction

Governments are charged with the protection of public health and also with driving economic development. Improvements in food safety including the implementation of HACCP in food businesses can have a positive effect on both of these issues. HACCP implementation in SLDBs requires participation from several different government departments because activities are rarely the province of one government department alone. For example, government departments such as health, agriculture, fisheries, education, development, trade and industry/enterprise could be involved. Therefore, it is important that a government-led national policy on food safety is adopted. It is necessary that any activity regarding HACCP is taken as part of this coherent inter-departmental and multi-disciplinary approach with full stakeholder involvement. In the absence of a national government-led food safety policy, it is likely that policy decisions are taken by other stakeholders such as the more organized elements of the food industry, market forces or organizations outside of the country. Should this be the case, it could be to the particular detriment of the economic development and sustainability of SLDBs, thereby also having a social impact.

Given the barriers facing the implementation of HACCP in SLDBs that were discussed in Chapter 2, it is evident that many activities will need to be taken on many different fronts. For these activities to deliver the desired goals of the food safety policy, it is necessary to organize them in the most efficient and effective manner. This is best achieved by developing a co-ordinated strategy. The key to facilitating HACCP implementation in SLDBs is the development of such a strategy which enables national policy on food safety to be realized.

In some countries it will be possible to conceive a single all encompassing strategy to capture every activity that is undertaken to facilitate the implementation of HACCP in all SLDBs irrespective of food sector. In other countries it may be necessary to develop a series of strategies aimed at SLDBs in specific food sectors. If this latter approach is adopted then the strategies will still need to be co-ordinated in some way to ensure that they enact and reflect the national food safety policy. In either case the steps outlined in this chapter to enable the creation of effective strategies are applicable. For clarity, the term strategy used in the context of this document will refer to a single national HACCP strategy which consists of a series of co-ordinated strategic activities implemented through a planned process.



Development of a strategy for HACCP implementation

A strategy should start by broadly listing the desired objectives and outcomes in terms of food safety and/or economics, depending on political priorities expressed in the national policy. The strategy should focus on the creation of an environment which will facilitate HACCP implementation in SLDBs. It should be based on sound and comprehensive information and concern itself with solutions and their likely impact. It should also be specific about the sectors of the food industry and sizes of business that should be addressed. If the strategy has been developed correctly then delivery on the strategic activities, discussed in Chapter 4, should culminate in the achievement of the desired policy outcomes.

Conceptually, a logical sequence of steps can be followed to successfully develop a strategy regarding HACCP implementation.

1. Gather information
2. Define the barriers and identify their causes
3. Develop and select possible solutions
4. Draft strategy and consult widely
5. Conduct an assessment of the potential impact of the strategy
6. Modify and publish the strategy
7. Implement the strategy (including monitoring of results and feedback)

Gather Information

Information, relevant to HACCP implementation in SLDBs should be obtained from both external international sources and internal national sources.

It is important to learn from the experiences of other countries and therefore the published literature should be consulted. Organisations like FAO and WHO can be very useful repositories of information relevant to national strategy, as can the web sites and published literature from national governments or their agencies^{15, 22, 25, 26}. However, while interpreting this information it is important for national governments to be aware that specific influences exist in other countries (e.g. food industry profile, economic performance, organisations and

support structures, infrastructure etc) that often underlie the adoption of a particular strategy and may not necessarily be communicated openly. Consequently, strategies adopted by one country may not be effective in another country. Brief summaries of some national experiences are provided in Annex 1 for reference.

Regarding internal national sources of information, initial consultation with the relevant stakeholders is vital, because they often have information which is not publicly available and their views allow other information to be placed in the correct context. One possible way of gathering internal information is by survey which could take the form of a structured questionnaire which should be statistically validated [refs needed]. The results of surveys must be interpreted carefully. The information obtained from SLDB self diagnosis may not be entirely compatible with similar information gained by third party audit of a business's food safety management system. It is recommended that the outcomes of a survey are always cross checked with other information sources like official inspection reports, trade body reports or other available surveys. The findings should be broadly consistent and any anomalies should be investigated before developing a strategy on the basis of possible misinformation.

Examples of relevant national information are given below, but are not comprehensive and governments should develop a more exhaustive list relevant to their national circumstances.

- Food-borne illness
 - Underlying causes of sporadic food-borne illness and outbreaks
- Economic and structural profile of the food industry
 - Contribution to GDP
 - Food business size profile
 - Export vs import
 - Employment
 - Level of quality assurance programs
 - Availability of skilled personnel
- Evaluation of food safety support structures
 - Government
 - Industry
 - Third party
- Evaluation of internal pressures/strengths and challenges
 - Legal requirements
 - Political drivers
 - Basic infrastructure
 - Level of economic development
 - Official food control structure, organisation and resources
 - Cultural considerations
- Evaluation of external pressures/opportunities and weaknesses
 - Export requirements
 - Legal requirements
 - WTO rules

Much of this information will be readily available to national governments. However, where information is lacking further studies may be necessary to fill the gaps. Many national governments or third parties have commissioned work to fulfil this purpose. For example, full national diagnostic studies of some countries have been carried out in conjunction with FAO

and have been designed to capture all relevant information in one document to support policy decisions^{11,12,30, 31}

Define the barrier(s) and identify their causes

From the information gathering phase it should be possible to identify and define the barriers that face successful implementation of HACCP. With respect to HACCP, barriers tend to have a public health and economic consequences. It is important for a national government to decide on the relative priorities of these two factors as they are inextricably linked. Consequently there may be a limit to the improvements in food safety that can be achieved without endangering the existence of many SLDBs (refer Chapter 2).

To identify the causes of a barrier an analysis of the general information available can identify correlations with possible causes. However, it is important to distinguish between correlation and causality if the barrier is to be overcome. For example the number of outbreaks of food poisoning may be inversely correlated with the level of HACCP implementation in food businesses but this does not necessarily mean that food-borne disease outbreaks can be reduced by the implementation of HACCP in SLDBs. Outbreaks may be due to breakdowns in the prerequisite programme or be caused by certain traditional practices.

Identification of the cause of a barrier may require very specific detailed information gathering from SLDBs. Hence, information gathering becomes an iterative process throughout the lifetime of the strategy.

Develop and select possible solutions

There are many approaches that can be used to develop solutions to the causes of the identified barriers. Here, the outcomes of detailed surveys can be useful particularly if the respondents have been asked to provide possible solutions to their problems. A discussion of techniques is beyond the scope of this document. However, brainstorming or associated techniques are commonly used to develop solutions to problems.²³

It is recommended that national governments aim to generate their own solutions to their own problems taking into account local conditions and drivers (see Reference to subsequent sections). It is important to note that a workable solution in one country will not necessarily work in another country and reference to the information gathered at the start of the strategy development will play a major role in ensuring that solutions are practical. In addition, any identified incentives (e.g. a state-funding agency for promoting exports) that are already in place for the implementation of HACCP in SLDBs should also be incorporated into the strategy.

Draft strategy and consult widely

A HACCP strategy will inevitably affect a wide range of stakeholders (i.e. consumers, food industry, government bodies and possibly organisations in other countries). Therefore it is important to draft a strategy based on the definition of the problem and the best possible solutions and then consult widely for input. There are many ways of developing strategy

however in all cases it is recommended that representatives of all stakeholders are involved. The strategy should have a goal linked to the policy and objectives that are linked to the achievement of the goal. In turn specific activities can be defined under each objective to ensure the objective is met. In this way the strategy is likely to be more creative, more effective and more widely adopted. Governments should take all possible steps to gain commitment for a HACCP strategy and participation in strategy development can be a means of achieving this ^{18, 24, 27 more refs to published HACCP strategies needed}. It should also be recognised that a strategy develops over time and therefore it is important that regular reviews, continuous evaluation and measures of progress are built into the framework. The outcomes here can be used to modify the strategy over time in light of changing circumstances brought on by its implementation. However, in modifying the strategy it should not be forgotten that it is linked to national policy and should always enact that policy.

The strategy envisaged should provide a co-ordinated plan of action to enable the solutions to be implemented within realistic time scales. There will be many barriers to the implementation of a HACCP strategy which often requires behavioural change and impacts on the available monetary and people resources. The consultation phase should be designed to elucidate the issues surrounding the implementation of a strategy as well as to test the underlying thinking behind it.

The method of consultation will vary widely from country to country. In some, web based consultation works, whereas in others it may be necessary to physically engage the stakeholders either indirectly via a consultation document or directly via focus meetings. Consultation is also important in gaining commitment from all stakeholders. Meaningful involvement in the process can be used as a means of creating ownership of the strategy and consequently this may ease its future implementation. Governments should be wary of enacting consultation approaches that do not engage with all stakeholders or are not transparent. It is important that the information provided during consultation is acted upon. Otherwise the strategy is likely to be undermined and its implementation may prove difficult.

Conduct an assessment of the potential impact of the strategy

It is possible to use information gathered at the start and during the process together with input from the consultation phase to conduct an impact assessment. This should strive to look at each stakeholder group and anticipate the possible effects that implementation of the strategy may have on that group. It should also look at the economic resource issues and the social impacts of the strategy. For example, a strategy that includes mandatory HACCP implementation may result in the closure of a significant number of SLDBs unless sufficient support structures are put in place. Implementation costs may also be passed on to the consumers by way of higher prices, thereby eliminating the market. By assessing the likely impact of a policy it can be determined what actions may be necessary to limit the impact and in doing so the seeds of a strategy are sown. However, it should be noted that national experiences have shown that a certain level of impact is unavoidable and therefore it is important that governments do anticipate and tolerate the ensuing economic and social outcomes of their actions.

Modify and publish the strategy

In light of the feedback from the consultation phase and the issues highlighted in the impact assessment it may be necessary to modify the strategy. The strategy should then be published in an appropriate form and communicated widely to all stakeholder groups. An active rather than a passive approach is recommended in this regard, because it is important that everyone affected by the strategy has access to it, and is actively involved in its implementation.

Implement the strategy

Once the strategy has been agreed upon and published officially, it will require an action plan to ensure its implementation. There are many ways in which this can be done. For example, in some countries steering groups have been formed that are responsible for execution of the strategy; in others, a specific agency may be charged with the same task. However, successful implementation will require commitment from all the stakeholders. Therefore, irrespective of the implementation method that is chosen, national government should ensure that all stakeholders are involved to some extent, depending on national circumstances.

A government embarking on a HACCP implementation plan will have to provide sufficient financial and human resources to realise its objectives. Governments should give careful consideration to the resource requirements of a strategy, as an under-resourced approach can signal a lack of commitment. This could be perceived by the SLDBs as a lack of government support to the detriment of the strategy.

Thought should be given to the correct sequencing of activities within a HACCP strategy, including whether the application of HACCP will be voluntary or mandatory and the option of a step-wise approach. For example, in some countries a progressive GHP to HACCP approach or alternatively, a voluntary to mandatory HACCP approach have been used successfully to ensure implementation.

As part of the implementation, it will also be necessary to determine the timing of the implementation. If the strategy includes mandatory implementation of HACCP for all food businesses types, the following are examples of implementation timing strategies:

- a) All food businesses to have HACCP implemented by a specified date. This approach is transparent and 'fair' in the eyes for food businesses. But is difficult for the regulator to resource. All food businesses will be requiring the resources supplied by government at the same time.
- b) Time frames are developed on a risk based approach i.e. the most high risk businesses must meet the HACCP requirements first. This ensures that resources are placed in the most 'problem' areas. However, the disadvantages may include; resources spent on determining the risk (usually based on foodborne illness data and consumption data), resource on determining food categories and lastly, the biggest challenge; supplier specifications. If food service is identified as high risk, and therefore one of the first groups to implement the HACCP approach, they will need to require controls from their suppliers. This may not be achievable if their buying power is poor.
- c) Farm to fork approach is taken. This prevents the issue outlined above with regards to supplier specifications.

Training is essential for proper implementation of HACCP and no government strategy should neglect this fundamental element. National governments should take steps to facilitate the availability and delivery of appropriate training to government officials, in particular, who may be tasked with assisting SLDBs in implementing HACCP. These officials may need detailed training in HACCP, and specific training in various HACCP-based approaches as elaborated in Chapter 4. Considering that traditional inspection methods are known to be inappropriate for assessment of HACCP in food businesses, government officials may also need to develop relevant auditing skills.

Those responsible for implementing the strategy should also be responsible for monitoring and reviewing its progress on a regular basis and modifying the strategy as necessary. To ensure sustainable, long term success of the strategy, periodic assessments and hence public recognition of significant progress should be considered during the implementation phase. This will reaffirm commitment to the strategy.

Criteria for measuring success of the strategy

It is important for governments to measure the impact of the strategic activities it has undertaken and ultimately, the delivery of the national strategy. Measurement during review will enable effective modification of the strategy as it progresses. If a HACCP strategy is working then there should be an increase in the number of SLDBs implementing HACCP. Measurements taken before, during and after can be used to analyse trends and demonstrate improvements which should in turn provide greater public health protection.

How to measure HACCP implementation

This measure should be conducted on two levels. It should first seek to quantify the increase in the number of SLDBs using HACCP systems and the patterns associated with uptake (e.g. is it sector specific? Are certain size businesses or businesses at a certain level of development being omitted? etc.). Secondly, the measure should also try to capture the level of implementation of the system and any behavioural or attitude changes that have occurred as a result of the strategy. Clearly it is also useful to determine what barriers remain or indeed whether new barriers have arisen.

Whatever measure is used it is important to look at the before and after scenario. Consequently, planning is important and in fact the appropriate measure should be used before the strategic activity is undertaken and then repeated in a similar fashion during and after completion of the strategic activity. It is best to consider how to measure the HACCP implementation and select appropriate indicators during the development of the strategy. This may not be necessary for all elements of the strategy but it is particularly essential for financial support systems, training and any introduction of HACCP-based systems.

It is possible for a professional auditor to examine in detail the level of implementation (i.e. increase in numbers) and the quality of the HACCP system itself. Most practitioners would agree that a business can have a HACCP system in place but the system is not actually valid

and does not offer the level of food hazard control that it should. Similarly a well designed HACCP system can be implemented badly. Professional auditors should seek to elucidate these features where possible. An essential feature in measuring these features is observation and questioning of all staff in the SLDB as well as examination of the documentation and records. Professional auditors could be independent qualified third party experts or qualified government officials. In both cases the auditors should work to an agreed transparent protocol to increase the consistency of the exercise²¹. The level of detail that can be achieved is a direct trade off with the level of financial and human resource available for the measurement exercise and national governments should select the most appropriate use for their circumstances.

Changes in knowledge, attitude, and behaviour in food safety are difficult to assess directly. However, a number of psychological tools have been used successfully in this context. For example, the narratology approach uses in-depth, non-directive interviews and subsequent detailed content analysis to assess the 'psyche' of the interviewee. If undertaken *before* and *after* an intervention psychological change in knowledge, attitude and behaviour within the business can be determined.

Another approach may be to design a risk management module linking the food business risk category and the grading score rates of the inspection report to decide the frequency and schedule of inspection (e.g. Jordan²⁷). Hence, this system can provide a systematic science-based methodology to monitor food business compliance and enhanced performance.

Indicators of successful HACCP implementation

Indicators are relevant for national governments to decide whether HACCP is being successfully implemented in an SLDB or a sector. By doing this they can decide whether they have achieved their targets under the strategy and hence determine its success. The indicators that are relevant for the measurement of HACCP implementation will differ depending on national circumstances and the strategic approach used. Research in this area is still in its infancy but some indicators have been elucidated and are given here as guidance.

- assessment of on site documentation/records (appropriateness, accuracy and validity)
- history or track record of the SLDB
 - number of compliance violations
 - findings of enforcement officers
 - associated food safety incidents
- number of consumer complaints either by business or by sector
- reported foodborne illness associated with a business or sector
- number of certified businesses in a sector
- number of product recalls in a business or sector
- comparison study on business achievements based on risk management profile and scored inspection report and grading scale.

In The Netherlands the enforcement officer uses a checklist based on one or more HACCP topics during every inspection. The results are entered in a laptop computer: stating if compliant or not. All results are analysed. This gives an idea of compliance of the business sector on the HACCP related items. This provides input for further action (e.g. the priorities in

the next period, communication with the sector association or additional information to the sector).

Chapter 4

Strategic Activities to facilitate HACCP Implementation in SLDBs

Leading on from the previous chapter, this Chapter is designed to provide examples of the types of activities that may need to be considered as part of the strategy. It is worth noting that if these strategic activities are enacted individually they are unlikely to resolve difficulties for SLDBs, hence the need for a complete and coherent strategic approach. For reference to national approaches where some or all of the following strategic activities have been undertaken the reader is referred to the summaries in Annex 1. The reader will note that two quite distinct groupings of strategic activities are outlined in this chapter. Part A describes activities that are vital to support HACCP implementation in SLDBs. Part B describes HACCP-based approaches which have been developed and implemented by various national governments and other concerned parties as successful scenarios in their countries. All are equally valid in a strategy and no single activity should be used in isolation. However, it is not necessary to include all examples for a successful HACCP strategy.

If a national government has developed its strategy in a similar way to that outlined in the previous chapter, there should be sufficient information available to enable selection of the best strategic activities based on their features, advantages and disadvantages.

Part A: Support activities

Provision of Financial Support

It is inevitable that a government embarking on a HACCP implementation strategy will have to provide financial and human resources to realise its goals. However, these resources are often directed towards the development of materials for SLDBs or official control activities rather than being directly accessible in the form of support and assistance by SLDBs.

It should also be recognised that financial costs associated with implementing HACCP are significant barriers for SLDBs. The access to the materials and training required for HACCP implementation may require the provision of financial support. In some countries with developed trade associations grant aid may be available via these sources [ref needed]. In most countries some form of government support for the food industry is available. Good examples of the provision of government financial support for Good Hygiene Principles and HACCP development have been implemented in Thailand, Brazil, Chile^{12,30,31}. Emphasis was placed on GHPs as the governments view was that without proper GHP, SLDBs were not able to implement HACCP.

In Canada, the HACCP adaptation program provided financial support for the agri-food sector³². In Colombia, CIESI, Research Center for Economy and International Competitiveness,

Universidad Javeriana, runs a program supporting GMP implementation in SLDB with national funds for SLDB development³³.

It is important that where financial support is provided to SLDBs for the purposes of facilitating HACCP implementation such as HACCP plan development or training, policy makers should ensure that appropriate support facilities are available. This will inevitably mean co-ordination and co-operation between different bodies involved in implementation of HACCP to ensure delivery of the required support. It is important that the procedures for accessing financial support must be as simple as possible as financial support accessible via a complex process is unlikely to facilitate uptake by SLDBs. However, there should be appropriate control measures in place to ensure that financial support provided is used effectively for HACCP implementation.

Some features of effective financial support:

- Targeted funds for HACCP development in SLDBs
- Targeted funds for development of sector-
- Improvement of equipment and facilities
- Administration by a single agency via local support structure
- Simple mechanism to obtain funds
- Support mechanism to raise awareness of financial support
- Establish a monitoring system to evaluate success

Advantages of providing financial support:

- Will facilitate HACCP implementation as part of a holistic approach
- Will provide opportunity for improved equipment and facilities
- Will raise the level of training and technical ability of SLDBs
- Will demonstrate government commitment to SLDBs
- Minimises the potential social and economic impact of a mandatory HACCP approach

Difficulties in providing financial support:

- Not available in countries with limited budgets
- Is not effective in isolation of other support activities
- May need to be supported by the provision of government approved HACCP programmes and training
- Can prove expensive for governments
- Will be limited in time and will need suitable spending evaluation structures
- Ensuring a system in which allocation of funds is done in a fair manner

Some examples of effective financial support:

- Targeted funds for general hygiene training and HACCP training
- Grants linked to the purchase of government approved training and HACCP systems or other certified/recognised programmes
- Financial loans available with favourable low rate and/or long term payback provisions for SLDBs
- Access to equipment calibration services at reduced rates

Provision of Guidance and Explanatory Information

This section focuses on guidance and information provided in the form of manuals, short booklets, leaflets, videos etc. Provision of guidance in this form features in and underpins most government HACCP strategies. It is a valuable tool in raising awareness of HACCP in SLDBs, providing clear advice and clarifying the HACCP concept but on its own is a limited tool for increasing HACCP implementation in SLDBs, often due to their lack of practical content. There are many national examples of short documents or leaflets that have been developed to introduce the concept of HACCP and the advantages that the system offers for SLDBs (referenced in Annex 1). Guidance booklets have been developed to explain the terminology surrounding HACCP and food safety in an attempt to address the technical barriers described previously. Specific guidance has also been developed by governments for specific types of SLDBs. Guidance documents tend to advise and point the SLDB in the right direction rather than giving them more practical help.

In Chile, SAG, Department of Agriculture has developed several guidance documents on GMP, HACCP, traceability and other food safety subjects³⁴. In Argentina, SENASA, Department of Agriculture have developed several guidance documents for evaluation of HACCP in meat and poultry sector and criteria for evaluating HACCP auditors³⁵. IPEH, Peruvian Asparagus and Vegetables Institute and PROMPEX, Peruvian Commission for Exports Promotion, developed a model and a technical standard for the safe production of Asparagus that was successfully implemented all along the country, third asparagus producer worldwide³⁶.

Some features of effective guidance/explanatory information

- Short and specific
- Promotional and instructive
- Suitable for training in specific sectors
- Provide a 'gateway' to further information and advice
- Written in plain, simple language
- Available in appropriate languages
- Usefully illustrated
- Contain good practical examples of use to SLDBs
- Relatively inexpensive or free of cost to print and distribute
- Include advice on the approaches to HACCP implementation, particularly hazard identification, identification of CCPs and validation/verification of HACCP systems
- Relevant to problems faced by specific sector

Advantages of providing guidance/explanatory information

- Can communicate simple messages well
- Are likely to be read if written and published correctly
- Provide a first introduction to the subject and available services
- Provide good references
- Can engage the SLDBs initially
- Enhance awareness and commitment by SLDBs
- Can signal support for SLDBs

Difficulties in providing guidance/explanatory information

- Initial engagement must be followed up by other means because SLDBs may need more detailed help to implement HACCP

- SLDBs often need support with further lines of advice and communication
- Cannot communicate nuance or complexity
- Assumes a certain level of literacy in the recipient

Examples of guidance and explanatory information

- Manuals / How to Guides
- Technical references
- Hazard Guides
- Promotional Documents
- Videos

Provision of HACCP Training

Training is essential for the implementation of HACCP and no government strategy should neglect this element. This section involves the provision of short formal and informal training for the staff of SLDBs. Without some form of training it is unlikely that an SLDB will be able to implement and maintain a sustainable HACCP system. As noted in Chapter 2, SLDBs have specific training challenges due to their size and financial constraints. National governments should take steps to facilitate the availability and delivery of appropriate training to this sector, which reflects the national approach.

National initiatives vary depending on the nature of the education structures available in the country. Some governments have sponsored and organised formal training courses either provided by selected commercial entities or other institutions. Good examples of this approach have been developed in Brazil, Thailand and Chile^{12,30,31}. In Costa Rica, CITA, Center for food technology research and transfer from Costa Rica, runs a training and assistance GMP/HACCP program covering several countries in Central America, since 1990, supported by Seafood HACCP Alliance, US, Natural Resources Institute, UK, and OEA's Multinational Project for Quality Management and Productivity of SLDB³⁷.

Countries without resources to formally establish and sponsor training in a formal manner have set standards for courses developed by third parties including trade organisations or developed documents with an approved syllabus for HACCP training courses. In this latter initiative the documents can be used by the SLDBs to determine if the training they are buying is of the correct and suitable standard. Examples of this have been implemented in Ireland. In New Zealand the regulator has worked along side training organisations to develop unit standards for HACCP. These standards have also included on-site assessments at food businesses to determine the food handlers competency is put into practice rather than being theoretical. In Canada, the CFIA has a partnership with a national training organization to develop training material for the seafood processing sector. The National Seafood Sector Council has developed and facilitated delivery of training across Canada in HACCP, personal hygiene, sanitation etc³⁸.

Other initiatives include sponsoring experts to go into SLDBs and provide in house advice and training that is specific to the business. This latter approach whilst resource intensive is extremely effective for SLDBs. Whatever approach to training is taken it must take into account the level of literacy and numeracy within the SLDB and it must be cognisant of the time and financial constraints under which SLDBs operate.

Some features of effective HACCP training:

- Short and specific for food business types
- Facilitates the flow of information and skill development
- Covers pre-requisite programs as well as HACCP
- Does not take staff out of SLDBs for long time periods
- More practical sector orientated than theoretical
- Has an element of follow up in the business itself
 - Practical help in implementing learning
 - Checks that learning outcomes have been realised
 - Governments have a mechanism to control the training outcomes so they are consistent with the national approach, such as a government standard or an approved syllabus

- Cost accessible
- Widely available
- Includes “train the trainers” component
- Developed in consultation with SLDBs
- Accessible when needed

Advantages of HACCP training:

- Facilitates the implementation of HACCP
- Aligned with enforcement standards where HACCP is mandatory, but flexible enough to facilitate HACCP application in SLDBs
- Can be tailored towards SLDBs needs and processes
- Demonstrates government support for SLDBs

Difficulties associated with HACCP training:

- Can be resource intensive in SLDBs (costs including time and human resources)
- Requires support structures and follow up

Examples of effective HACCP Training:

- On site training
- Internal Training
- Self Learning including distance learning
- Provision of cases studies and materials
- High standard with controlled, consistent content

Voluntary Schemes

Alternative to the legal approach or a precursor to the legal approach and even complementary.
Text to be added [see Brazil, Thailand, Chile case studies]

Ask Colombia for a description, details of their system. Insert features, ads, disads.

Mandatory Provisions and Enforcement

Promoting HACCP as a legal requirement can facilitate its implementation in SLDBs. However, national experience suggests that this is not the case without concomitant support for SLDBs. The majority of SLDBs will want to comply with the law but may not be able to do so for a wide variety of reasons. Governments should therefore consider implementing a voluntary HACCP scheme prior to the introduction of mandatory HACCP. Mandatory HACCP should only be used as part of an overall strategy that includes elements of advice, training and other themes/aspects of supports listed in this document, including the application of GHPs.

Enforcement officers/inspectors are often the only available technically qualified personnel that SLDBs have regular contact with. However, it is essential that enforcement officers understand their role in providing advice to SLDBs. This can be a delicate balancing act as the primary role of enforcement officers is to ensure compliance with the legal requirements. Therefore enforcement officers should not get drawn into developing the HACCP system for SLDBs, but they can be effective in guiding the SLDB towards compliance by promoting improvement through the provision of sources of advice and training. If the enforcement officers provide advice on HACCP plan development or implementation then they should be clear on how this may affect their enforcement role. One guiding principle may be that any advice given by enforcement officers is given in the context of meeting the requirements. In some countries, separate roles are formulated for enforcement officers and officers with advisory and/or educational roles.

SLDBs should be encouraged and given sufficient time to comply with mandatory HACCP. The enforcement policy of a country is a matter for national governments and takes account of social and economic issues. However, some national experience suggests that HACCP implementation is enhanced if legal action is used appropriately and reserved for those businesses who consistently demonstrate unwillingness to comply. If a SLDB is unwilling or unable to comply, then alternate means may be considered to promote compliance.

The use of a stepwise approach to the introduction of mandatory provisions should be considered. For example, when implementing HACCP in a specific sector a strategy may be to allow voluntary compliance for a certain period (with the option of offering incentives to such businesses) before enforcing the mandatory provisions. This will enable the sector to introduce and develop appropriate systems in a reasonable time. Such measures should be communicated appropriately.

Some features of effective application of mandatory HACCP provisions:

- Introduced as part of a holistic legal framework
- Use graduated implementation of mandatory requirements
- Flexible drafting of the legal requirement with focus on the principles of HACCP rather than the process of implementing it
- Implemented with an associated enforcement policy
- Stepwise approach towards enforcement
- Wide communication of the legal requirement and enforcement policy
- Consistent enforcement in line with the enforcement policy
- Preceded by a provisional voluntary scheme and suitable training where appropriate
- Availability of a “tool” i.e. codes, template etc. to aid implementation that has been developed in consultation with members of the food sector for whom it is being developed.

Advantages of mandatory HACCP provisions

- Demonstrate a national intent for HACCP implementation
- Allow for legal protection of public health
- Act as an additional lever for HACCP implementation

Disadvantages of mandatory HACCP provisions

- Will not work without an associated support structure for SLDBs
- Could result in an unacceptable social and economic impact
- Can stifle innovative HACCP implementation if legal requirement is drafted too rigidly
- Misuse of resources, where prerequisite programmes are still lacking

Provision of Technical Expertise by Consultants and Other Advisors

As discussed previously under barriers, SLDBs are largely limited by the technical capacity at their disposal and as a consequence they often require external technical help. This can be derived from government, trade associations, education institutions or commercial advisors. The growth of HACCP has been mirrored by a growth in available advice. However not all advice is appropriate or applicable. The selection of consultants is difficult even if one possesses a high degree of technical capacity, therefore this challenge is particularly significant for SLDBs. In an ideal world, a government would ensure that the provision of advice would be regulated in some way. In reality, governments rarely have the resources to do this. However, governments can seek to ensure that approved sources of advice are available and accessible and to this end many governments have linked up with their education institutes to deliver training and consultancy or have supported the initiatives of trade associations. However, because of the sheer number of SLDBs it is rare that this approach will meet all the demand for advice. Guidelines have been written to help SLDBs to select consultants but this is not entirely successful (e.g. Ireland). Some countries have systems of consultant registration and certification and this can be useful in maintaining the quality of advice. In New Zealand, where a consultant is assessed against a unit standard, they can be recognised as being competent in that area. In addition, written advice has been provided to food businesses to assist them in selecting an appropriate food consultant.

A system of registration for consultants is in place in South Africa where natural scientists (includes HACCP trainers) register with the South African Council for Natural and Scientific Professions. This Organization has been recently mandated through a Parliamentary Act to take legal action and prosecute those members who do not act professionally according to the Code of Conduct of SACNASP. It may also be possible to facilitate the creation of groups of SLDBs to access a single source of advice, share experiences and to some extent learn from each other. This can also lead to reduced costs for SLDBs in securing advice.

Some features of effective technical expertise provision

- Advice and training linked to national strategy
- Government organisation/approval of education institutes, trade organisations
- Regulation of free-lance consultants to ensure high quality of advice
 - Registration
 - Certification
- Clear communication with SLDBs to indicate where best advice is available
- Easily accessible to SLDBs

Advantages of providing technical expertise through non-governmental experts

- Supports the HACCP strategy
- Develops skills within the SLDB
- Reduces government expenditure
- Provides the on site technical support that is critical to HACCP implementation in SLDBs

Disadvantages of technical expertise provision through non-governmental experts

- Can be resource intensive for governments to set up and regulate
- Difficult for government to properly manage such systems
- Can be a source of poor information
- Costs are passed on to SLDBs

Other activities that governments may have to consider in order to successfully implement their HACCP strategy are:

- Conduct cost/benefit analysis for HACCP implementation in SLDBs to help these businesses with financial planning
- Develop effective communication systems between government bodies and also between government and SLDBs to ensure a consistent message and reduce the likelihood of misunderstandings
- Involve larger more developed businesses in mentoring activities with SLDBs. This could take the form of assisting a small supplier to develop its HACCP plan or a more formal arrangement where a larger business will provide technical support to similar SLDBs. This would be to the benefit of the larger partner in that the reputation of that food sector would be better protected.
- Create small clusters of SLDBs to share the available resources and pool experiences and technical understanding
- Fund local resource centres where low cost HACCP guidance/support/training can be made available.

Part B : HACCP-based Approaches

The Codex general guidelines allow for a degree of flexibility in interpreting its methodology, provided they are underpinned by all seven HACCP principles. Alternative methods, often referred to as “HACCP based approaches”, may be the most useful way to facilitate HACCP implementation in SLDBs. A vital part of moving towards HACCP-based systems is recognizing that there are various means to achieve the same objective. That being said, where HACCP based plans are introduced, notification must be communicated to all national stakeholders to obtain consensus.

If national governments decide to develop HACCP-based approaches as part of their HACCP strategy it is important that they pilot such programmes on a small number of businesses before fully launching in all food businesses. A pilot programme should be carefully monitored and the outcomes used to fine tune the approach.

Advantages and disadvantages of HACCP-based approaches are highlighted below. Not all of these are applicable to all forms of HACCP-based systems.

HACCP-based approaches may have some of the following advantages:

- improved food safety
- integration within the overall food safety management system
- can facilitate and speed up HACCP and pre-requisite program implementation
- provide clear guidance for good practices related to hygiene and safety
- provide a good basis for training and education
- encourage instructed, continuous and consistent application of HACCP in SLDBs (remove?)
- strengthen audit and enforcement measures
- provide more prescriptive HACCP solutions favoured by SLDBs
- easier to assemble and manage
- do not require SLDB staff to have in depth knowledge of HACCP and related technical expertise
- provide a useful holistic overview supports record keeping at an elementary level (the documentation is usually covered by the guidance document itself: no extra work for the SLDB)
-

HACCP-based approaches may have some of the following disadvantages:

- international trade partners may require proof of equivalence to the Codex HACCP system
- unlikely to be implemented without a basis of adequate training
- limited effectiveness in SLDBs with low literacy skills, unless very specific HACCP-based approaches are developed for this specific target group
- resource intensive during development unless supported by an extensive structure of trade associations or other industry groupings
- may not always be specific for SLDBs but targeted at all sizes of industry in a particular sector
- poor organization of SLDBs into trade groups may not favour development
- may negatively affect the sense of ownership and limits empowerment
- focus may be on the documented plan rather than its actual application in the business
- difficult to anticipate all hazards introduced by subtle variations on seemingly standard processes
- requires an element of technical knowledge to adapt them

Some of the HACCP-based approaches which have been developed and implemented by various national governments and other concerned parties are explained below.

Codes and Standards Documents

Codes and standards documents (e.g. codes of hygienic practice, agreed national standards) are voluntary or mandatory (depending on government policy), sector-specific detailed sets of rules and practices aimed to provide information and facilitate HACCP implementation. Codes and standards documents vary in the level of detail they provide on HACCP and usually also cover the related elements (e.g. pre-requisite programs, recall procedures, traceability, management commitment) and hence may actually describe a full food safety management system. The final document can be approved by the government, consequently SLDBs that comply with the code or standard are considered to comply with the law.

A good example are the hygiene codes developed in the Netherlands since food businesses are compelled by law to be members of their respective trade association. Hence there is strong trade association coverage of the food sector (ref annex 1).

Some features of effective Codes and Standards documents:

- cover the related elements (e.g. pre-requisite programs, recall procedures, traceability, management commitment) and hence may layout a full food safety management system;
- written and approved by governments in collaboration with SLDBs
- technical decisions carried out by qualified expert
- recognised by enforcement officers
- written in plain and simple language (HACCP jargon may be replaced with simple language – e.g. hazard is replaced with “things that can go wrong”)
- flexible and “tailor-made” to cater for the needs of SLDBs
- sector specific (e.g. bakery, slaughterhouses, street vendors)
- identify classical CCPs, critical limits and corrective actions
- support simple forms of record keeping (e.g. temperature management, cleaning programs, incoming raw materials)
- accessible and well distributed
- supported with readily available advice.

Generic HACCP-based Plans

Generic HACCP-based plans have been generated by governments and other stakeholders as a means of helping SLDBs to implement HACCP. This approach aims to produce a pre-developed general HACCP plan that needs to be further tailored and adapted by the individual food business.

A flow diagram is provided for the food process to which the generic plan is applicable. Hazard analysis is completed and the most common critical control points (CCPs) and their critical limits are identified. Corrective actions are detailed and often guidance on documentation is given. Well known examples of this approach have been developed by the United States Department of Agriculture covering meat processing establishments (e.g. USDA Generic Model for Poultry Slaughter, 1999).

The intention of a generic plan is to enable the food business to adapt to site-specific variations in process and product. The approach is best suited to businesses operating processes that are consistent within the sector. Most successful generic plans are those developed for linear processes like animal slaughter, meat cutting and fruit and vegetable washing and packing. However, they are less likely to be useful for the complex multi pathway processes such as those found in the retail and catering sectors.

For products involving more complex processes, individual generic plans could be assembled using a modular approach (i.e. ‘pick and plug” choose sub-process components from various generic plans and assemble to design a tailored made HACCP process plan) which are useful for addressing the particular issues in SLDBs with non-linear processes (most retail and catering businesses). For a good example, refer to Annex 1 (New Zealand).

For products involving more complex processes, a modular approach may be useful. A common feature of modular generic HACCP-based systems is that they can be used to generate a number of different HACCP plans for multiple processes. They particularly favour food businesses with non-linear food production processes, especially at retail and catering level. They are commonly written in such a way that SLDBs cannot implement them without a certain level of interpretation and customization. It involves the development of a number of generic “sub-processes” with associated HACCP plans constructed. For these sub-processes hazards are identified, CCPs set or suggested, critical limits set or suggested etc. The food business must then select the sub-processes that are relevant to their business and amalgamate them into a coherent single HACCP plan. In this way, a small number of modules can be used to generate many HACCP plans [include refs to examples from NI and NZ and Scotland etc].

Generic HACCP based plans vary in the amount of support they offer. For example, some plans identify the appropriate hazards whilst others only suggest the possible hazards, requiring the SLDB to select the hazards that are applicable to their own processes. Some require the HACCP plan to be developed from the reference documents provided whilst others generate the modular documents in such a way that they can actually become the documented HACCP plan and in this respect they often resemble a workbook.

In this latter case the food business owner/manager works from the start to the end of the workbook completing the sections as directed taking into account the actual processes used in their SLDB. The completed workbook becomes the plan. Most systems developed to date still require a moderate level of record keeping. However, recent developments have provided modular systems where the daily record keeping requirement is minimal [ref Northern Ireland]

Because these HACCP-based systems do not look like traditionally developed HACCP systems it is essential that governments are involved in the development of such programmes. This is particularly important where a strategy includes mandatory HACCP because there is a likelihood that enforcement officers may not recognise the system as compliant.. Training for SLDBs and enforcement officers in this respect is essential.

Some features of effective generic HACCP-based plans:

- Developed in collaboration with all stakeholders (e.g. government officials, SLDBs, trade associations, educators etc.)
- Specific to a sector where processes are similar
- Provide a documented hazard analysis and associated references

- Provide a standardised layout for the whole plan which includes CCPs, their critical limits and corrective actions
- Provide examples of documentation and guidelines on its completion
- Outline methods and frequencies of verification and validation
- Clearly communicate the need for on-site adaptation

Evolving HACCP-based Methodologies

Evolving methodologies of HACCP may be positioned on a continuum between traditional approaches that are created by, and are wholly specific to, a particular business and completely generic approaches that involve the application of previously prepared plans and controls. The difficulties faced by SLDBs have been discussed earlier in this document. As a result, intermediate systems that address these problems have been developed. At first glance, these systems may seem to be so far removed from Codex HACCP that they are rejected ‘out of hand’; but, if they are firmly based on the seven principles, they are likely to offer a way forward for those SLDBs which find traditional methods of HACCP too difficult, time consuming or costly to implement.

These systems, whilst founded on the seven principles, ease the burdens on business through the application of one or more of these methods:

1. Supplying businesses with information on risks and hazards pertinent to their particular type of food production in order to reduce the levels of scientific knowledge and judgement required by the business;
2. Merging both the general (i.e. prerequisites) and specific (i.e. HACCP) hazards, in a way that businesses can understand and consequently control;
3. Grouping similar hazards and controls to facilitate the operation of HACCP by the business;
4. Utilising methods that reduce the quantity of record keeping (this may be in the form of a ‘diary’ or simplified records based on ‘management by exception’).
5. Refocusing enforcement and audit requirements onto the business’s understanding and control of processes (this might be typified as ‘self-audit’ monitoring).

An example of the use of one of these evolving methodologies is the ‘Safer Food Better Business’ system developed by the UK Food Standards Agency. (See Annex 1). The system merges both the general (i.e. prerequisites) and specific (i.e. HACCP) hazards, but their criticality is indicated by the level and frequency of monitoring required. The record keeping element of the system is focused on a diary that is signed on a daily basis by the person responsible for food safety. Focus is on record keeping by exception; i.e. writing down only when things go wrong and corrective actions undertaken. The verification of the system is done routinely by self audit; i.e. activity is undertaken by the manager responsible and intermittently by official enforcement officers.

Annex 1

Overview of some national approaches to facilitate HACCP application in SLDBs.

The extent to which governments should get involved in facilitating HACCP implementation is a matter for national policy. Many governments, faced with a low level of HACCP uptake in the food industry have made policy decisions to facilitate implementation. However the approach taken has depended on the objectives set by the national policy. Most countries have started by trying to analyse levels of implementation and barriers facing the food industry. Following on from this they have attempted to address the barriers by developing and implementing initiatives aimed at allowing food businesses to surmount the obstacles facing them. Some governments have attempted to measure HACCP compliance at the start and end of initiatives to gauge the effect and assess value for money. The types of initiatives that have been tried depend very much on cultural, economic, organisational and geographical factors that vary for every country. The following case study summaries should be used for reference.

Ireland

National factors supporting approach

- National policy for consumer protection and HACCP compliance
- National legislation requiring HACCP in food businesses in place for 4 years prior to initiative.
- Single body organising the official inspection process
- Well trained, motivated and resourced official inspectorate
- Existence of motivated trade associations
- Ample 3rd party expertise available to the food industry

Brief description of the approach and outcomes to date

The Irish government set up an independent government agency, the Food Safety Authority of Ireland (FSAI), to oversee national food safety in 1999. One of the FSAI's policies was to improve the compliance of the food industry with European Community legislation requiring food businesses to have in place a food safety management system based on the principles of HACCP.

A telephone survey of food businesses was conducted in 2000 to determine the level of compliance with the established European legislation and to identify barriers to successful HACCP implementation¹⁴. This was followed by a workshop involving official inspectors and the food industry. At the workshop a national HACCP strategy was developed with input from all stakeholders. The detail of the strategy was defined by a national HACCP steering group consisting of representatives of the FSAI and 10 Health Boards who are responsible for inspecting 40,000 of the 43,000 food businesses in Ireland¹⁸. Most of these businesses are in the retail and food service sectors and are SLDBs. At the same time an industry forum was created with representatives of the food service sector. A forum consisting of retailers already existed.

The strategy has been executed in steps focussing all resources on one target group each time. Target groups have been selected based on the risk they pose to consumer health and the resources available to help that group. HACCP information has been developed for each group selected with input from the official inspectors and the industry fora¹⁹. Each target group has started with inspection and assessment by the official inspectors to create a baseline²⁰. This has been followed by the provision of advice by inspectors, distribution of relevant materials and awareness campaigns both by the FSAI and by the trade associations. In each case a deadline has been set for completion of the target group.

A guidance note for inspectors assessing HACCP has also been developed and provides advice on enforcement measures to be taken²¹. On completion of a target group full inspections are carried out to determine improvement. Official action is being encouraged for those SLDBs who have shown no sign of commencing their HACCP implementation.

The first target group, hotels, was completed in June 2004 and progress has been significant. However, there remains a small but important group of hotels that have not started to develop HACCP plans. These will be the target for potential enforcement actions.

Lessons learned and the future

Although it is still early to determine the full effects of the Irish approach it appears to be working based on the measures of HACCP implementation in target groups before and after application of the strategy. However, it is resource intensive for the official inspectors and progress can only be made one target group at a time. The strategy represents an approach based on affirmative action by official inspectors backed by national support from the government and trade associations. It leaves food businesses to develop their own systems providing only guidance rather than generic HACCP systems. It is recognised in the near future that to tackle certain types of SLDBs a simplified HACCP-based approach may be necessary and resource will have to be allocated for this purpose.

United Kingdom

National factors supporting approach

- Large number of food premises (>540,000) of which over 60% are caterers.
- Catering premises are diverse with high turnover of staff and businesses and low levels of literacy
- National legislation for licensing of Butchers shops, has required them to have a HACCP system, in force since 2000
- National legislation since 2002 requires meat plant operators to introduce hygiene procedures based on HACCP principles
- A food safety initiative with specialist cheesemakers was launched in January 2002 to promote protocols based on HACCP
- EU regulation requiring the first 5 principles of HACCP in place in U.K. legislation since 1995
- Food Hygiene Campaign launched in 2002 has targeted food businesses to reduce food poisoning.
- Enforcement and education primarily at the Local Authority level.

- Many businesses in the manufacturing sector already operating food safety procedures based on HACCP due to customer requirements.

Brief description of the approach and outcomes to date

The UK Food Standards Agency (FSA) was established in 2000 with the aim of protecting consumers and improving food standards. Progress with the implementation of food safety management procedures in food businesses based on HACCP principles is seen as a key factor in working towards the FSA's target of reducing food-borne disease. The FSA recognises that, in order to achieve the public health objectives of forthcoming European Community legislation, many businesses will require further guidance to explain how they might comply with the new legislation by having in place a food safety management system based on the principles of HACCP.

The FSA carried out a survey of Local Authorities in 2001. The results of this survey indicated that the adoption of food safety management procedures based on HACCP principles is highest in food manufacturing premises and lowest in catering premises. An estimate of the prevalence of documented hazard analysis in retail and catering premises was made as a part of surveillance studies carried out by the Local Authority Co-ordinating Office on Regulatory Services and the Health Protection Agency. The six studies carried out since 2001 in over 9000 establishments in England and Wales reveal a wide variation in uptake of documented hazard analysis, from 8% (take-aways) to 70% (retail premises). The average figure over all establishments was 55%. In addition, recent surveys in Scotland and Northern Ireland indicated that the corresponding figure for catering premises only in these countries is about 35%. The FSA's strategy looks towards eventual full compliance with the requirements for food safety management based on HACCP principles in the forthcoming legislation.

The FSA's strategy is to produce a 'toolkit' of guidance materials and supporting materials on different approaches to HACCP, recognising the diversity of the industry and that there can be no 'one size fits all' solution.

The FSA has decided to address the need for guidance materials in the catering sector first, because of the high proportion of catering premises (about 60%), and because it is in this sector that the most progress needs to be made. It is also a particularly difficult sector for which to produce guidance, since it cannot be treated as a manufacturing, production line operation. The nature and size of catering businesses is so diverse that it is highly improbable that any single approach will satisfy the requirements of the whole catering sector.

The FSA's 'toolkit' of approaches will provide businesses with the option to choose a route to compliance that best meet their business needs and preferred management style. Businesses will also be free to use other models that facilitate compliance.

As part of the 'toolkit', the FSA is developing a food safety management tool, 'Safer Food, Better business' (SFBB), based on its Food Hygiene Campaign, in conjunction with enforcers, caterers, HACCP experts and food scientists and trade associations. SFBB is aimed at small and medium sized catering businesses (<10 employees), which account for almost 90% of all catering businesses in the U.K. and targets the owner or manager of the business. In addition to SFBB, FSA Scotland and Northern Ireland have each also produced guidance materials.

Guidance materials are being developed in partnership with all relevant stakeholders. These include local authorities, industry representatives, trade associations and businesses. The FSA has recognised the need to build from the current level of knowledge in the business, particularly at the micro-business level, in achieving the implementation of a food safety management system. The FSA has also recognised the diversity found within the catering sector and has undertaken a number of projects to ensure that guidance materials are fully relevant to these sectors. A number of projects to test the feasibility of guidance and methods of delivery are currently underway. The results of this work will inform the further development of guidance materials, the constituent parts of the Agency's 'toolkit' and the FSA strategy on implementation from 2005.

Lessons learned and the future

The UK approach, which uses the flexibility in Codex's General Principles of Food Hygiene for controlling a food operation and within the EU Regulations to provide small catering businesses with a 'toolkit' of routes to compliance, will be supported by a graduated and educative approach to enforcement. The success of the approach will be determined by trial results, expected by early 2005. These trial results will be reflected in future guidance and business support that will be rolled out during 2005. Indications to date recognise the need for the business sector (here caterers) to be fully involved in the production of guidance materials and for thorough testing of materials before wide-scale use. It is recognised that much of the further development of HACCP guidance is likely to be industry-led, and that full compliance may take several years. Consistent support on a national and regional level will be provided through local authorities and trade associations, as well as from government.

New Zealand

National factors supporting approach

- Single integrated agency taking responsibility for all food-related legislation.
- Current mandatory requirement for the application of GHP and HACCP in some sectors, particularly in the export sector (e.g. animal products, seafood and dairy).
- Intent to mandate HACCP based programmes through out the food industry.

Brief description of the approach and outcomes to date

The New Zealand Food Safety Authority (NZFSA) was established on 1 July 2002. The Authority takes a new approach to food safety by bringing together the food safety functions of the Ministry of Agriculture and Forestry and the Ministry of Health. One objective of the NZFSA is to develop a seamless food regulatory regime across the entire food chain. The regulation of the meat, dairy and other food types have been regulated differently and mainly in isolation from each other.

Different approaches towards HACCP implementation had been developed by the regulator managing a food sector.

At the time of the establishment of the NZFSA, the Meat and dairy sectors were heading towards full mandatory HACCP for business within specified time frames; the domestic sector had the option of voluntary implementing HACCP based programmes.

A significant difference was also the implementation of GHP and its association with HACCP. The regulators responsible for the meat and dairy sectors (Ministry of Agriculture and Forestry) had separated GHP and HACCP requirements.

This approach differed from the Ministry of Health, which had integrated GHP and HACCP, requiring that hazards for pre-requisite programmes were identified. This was required for the following reasons:

- a) Pre-requisite programmes in place in the domestic sector were out of date and prescribed.
- b) There was a need to reconsider the hazards the pre-requisite programmes were controlling and determine if they were adequate and/or appropriate for the process.
- c) Experience indicated that these programmes became secondary to the HACCP component and were often forgotten.

Lessons learned and the future

The Animal Products group within the NZFSA reports success with the use of generic HACCP guides, plans and templates. The success has been aided by good working relationships with food sector associations, some of which include SLDB's. This means that the group can input into HACCP-based approaches and all guidance materials/ templates. A good example of an outcome of this collaborative approach is the "Risk Management Programme Template for Eggs

Another initiative from the Animal Products group is successful is an active programme of revising generic HACCP work to reflect current HACCP thinking and improving guidance and template material based on food business and external verifier feedback.

The Domestic and Imported Foods Group within the NZFSA, has continued with the voluntary implementation of HACCP based programmes. The team has noted four particular areas of success.

Firstly, a resource folder including HACCP guidance, Frequently Asked Questions, legislative requirements has been very well utilised by food businesses.

Secondly, template based solutions seem to be readily implemented by all types of food businesses. The NZFSA template on staff sickness is an example of this エラー! 参照元が見つかりません。

Establishing processes for open dialog between the NZFSA, local regulators, external verifiers and food businesses has been essential to ensure improvements in the HACCP based programme approval process (including ongoing verification and on-site programme review) occur was the third area of success.

Lastly, the voluntary shift towards the HACCP based programmes has worked particularly well for 'chain type' food businesses. This is where a head office of a food business chain develops one HACCP based programme for all sites e.g. a fastfood chain, service station chain, supermarket chain. The programme includes training on how to implement (including site specific hazard identification) and comply with the programme on an ongoing basis as well as

extensive food safety training for each food handler. The level of success was greater where the head office was particularly active in following up with stores after their external audits.

The success of these 'general agreements' or generic templates for 'like' businesses has led to our view that successful implementation of HACCP based programmes for SLDB's is dependant on the development of such tools.

The voluntary status of HACCP implementation within the domestic sector and harmonisation of HACCP requirements between the food sectors is being developed under the New Zealand Food Safety Authorities Domestic Food Review.

New Zealand is proposing that risk-based management plans, called food control plans, will include 'good operating practice' and HACCP. Good operating practice is intended to encompass good agricultural, good manufacturing and/or good hygienic practice.

The elements of good operating practice include:

1. Each good operating practice system should control or assist in controlling a food safety hazard or food suitability issue, and cover such matters as training.
2. Where possible, good operating practice should be science-based.
3. Good operating practice systems should be relevant to the food type and food process.
4. Good operating practice systems should be documented and follow these headings:
 - a. • purpose
 - b. • scope
 - c. • authorities and responsibilities
 - d. • materials and equipment
 - e. • actual procedure (including monitoring, corrective action and internal verification)
 - f. • recording and reporting.
5. Good Operating Practice may be developed and documented prior to applying the HACCP principles.
6. Good Operating Practice should be reviewed in conjunction with applying HACCP principles.

Food control plans are intended to cover the following components to the level appropriate for the business:

1. Responsibilities and authorities – administrative details such as name and address.
2. Scope – product and process description.
3. Relevant regulatory requirements.
4. Good Operating Practice (see elements above).
5. Documentation and record keeping
6. Application of HACCP principles, including hazard identification and analysis, critical control points and critical limit determination, critical control point monitoring and corrective actions when needed and internal verification.
7. Training
8. External verification, and verifier competencies and rights.

New Zealand sees that the real key to the application of food control plans is the simplicity of plans and the role of the regulator.

In order to help good implementation of the food control plans, the NZFSA, as the regulator in this area, is expecting to provide templates and other guidelines for food control plans that will cover the needs of some 30- 40,000 businesses. The balance will either already have plans in place or, because of size or the use of proprietary processes for example, will be developing individual plans covering their specific businesses.

Food control plan templates will generally be presented as part of, or supported by, codes of practice for particular food sectors, with GOP and HACCP elements and any regulatory requirements clearly identified. Food control plan templates might already be available within a food sector or may well exist in complimentary form in another country (and which might be adapted for New Zealand business).

The type of tool produced will vary depending on the level of understanding of a particular food sector. HACCP principles will have been applied in developing the template, and small to medium sized business operators will not need to repeat this step.

New Zealand has not commenced broad application of the above approach. Discussion papers proposing that food control plans be the tool of choice for food safety management in the future were released publicly. Depending on submissions, developments are expected to continue throughout 2005.

Canada

National factors supporting approach

- No National policy for HACCP implementation, three levels of Government responsible for food safety (Federal, Provincial and Municipal). Each authority has taken differing strategies to address food safety challenges.
- The Canadian Food Inspection Agency (CFIA) is responsible for all federal inspection activities related to food safety. This includes foods which are imported into Canada or which are destined for export out of Canada or between Provinces.
- The CFIA has two strategies for HACCP implementation for federally registered food processing establishments. The Quality Management Program (QMP) for the fish processing sector and the Food Safety Enhancement Program (FSEP) for the agri-food sector (meat, processed fruit and vegetables, egg, dairy, honey & maple syrup).
- The QMP has been mandatory since 1992 and has been implemented in approximately 1000 establishments.
- The FSEP is currently a voluntary program but legislation amendments will be passed in the near future to make it mandatory for the meat processing sector.
- The CFIA is also working with industry on an on-farm food safety program to implement food safety systems based on HACCP at the farm level.

Brief description of the approach and outcomes to date

The CFIA was formed in 1997 through the amalgamation of the food safety responsibilities of three different federal departments bringing together separate food safety strategies for the different food sectors. These strategies such as the QMP and the FSEP have continued to

evolve to address the specific challenges of the different sectors. However experiences are shared between the two programs to facilitate harmonization and improvements.

The fish processing sector in Canada is very large and diverse and is heavily reliant on international markets. Over 80% of Canadian fish products are exported to some 125 different countries each year with a value in 2003 of \$4.7 billion Canadian. As HACCP is a requirement for importation to most of these markets, its effective implementation was essential for maintaining this important industry. The Canadian Government worked closely with the industry, its association and other institutions to ensure that the necessary tools and guidance were available to facilitate the design and implementation of individual processor QMP plans. In consideration of the technical and resource challenges facing industry it was necessary to design a program which is flexible but adequately addresses all food safety concerns.

The Food Safety Enhancement Program (FSEP) recognizes and audits HACCP Systems (Prerequisite Programs & HACCP Plans) in federally registered establishments within the commodities of Meat & Poultry, Processed Products, Dairy, Shell Eggs, Processed Eggs, Honey, Maple and Hatcheries. The CFIA-ACIA is working under a voluntary approach in all of the aforementioned commodities, with the exception of Meat & Poultry, which will be expected to be mandatory prior to the New Year. The Agency will investigate the potential for the remaining commodities in regards to mandatory requirements based on Industry readiness and International requirements.

Lessons learned and the future

The design and implementation of the QMP and FSEP was and continues to be a learning experience. The most significant of lessons learned to date are as follows:

- 1) take a stepwise approach with industry implementation, don't expect that industry will be able to implement everything right away, rather work toward continuous improvement and focus on what has been accomplished and not on what the processor has left to do.
- 2) listen and communicate, when a processor has a problem with certain requirements it is not because he doesn't want to produce a safe product, it is because he may not understand the requirement or its importance. Be willing to listen, have the requirements clearly laid out and communicate them.
- 3) be flexible, allow the processors to develop a HACCP to fit their operation, this will increase ownership and lead to more effective implementation and continuous improvement.
- 4) provide tools to assist the processor in understanding the requirements, guides, websites etc. but avoid generic plans. Generic plans leads to a forced fit, in QMP we provided some example plans based on industry input which was used for illustrative purposes only.
- 5) in a regulatory program there must be a clear enforcement process for those not complying. You do not want too strict on enforcement nor too soft. Processors will loose their commitment if they do not think they will be assessed and the program effectiveness will suffer.

Up to this point most of the effort has been directed at HACCP design implementation, for the future it is important to be able to measure the performance of the food safety strategies. It is necessary to identify indicators that can be used to demonstrate that food safety is actually being achieved. This process will produce data and information on the effectiveness of both the individual processor's controls and the program design and maintenance.

Netherlands

National factors supporting approach

In the Netherlands there are 16 million citizens divided over the whole country. A total of 130,000 companies are active in the production and/or distribution of food, of which 3,500 are considered industrial larger businesses. The other companies are middle and small businesses with usually insufficient know how and experience on HACCP. Most of these businesses are not able to develop and implement a food safety system by themselves.

Legislation:

In accordance with the EU directive 43/93 the basic obligations for food safety were implemented in the Dutch legislation in 1996. From the beginning, it was clear that this change in legislation should result in a permanent effort by all food companies. Despite the advantages that were seen by some companies, it was clear that without due pressure from the government and consumer associations, the implementation in general of food safety provisions would not succeed. Obligation by law was necessary to mobilise the businesses to start this task.

Branch associations:

Historically, the Netherlands has a wide range of branch associations. The associations/boards have legal status and fulfil a very important role between the government and the food business. The law also specifies that all food companies in the specific branch are obliged to become a member of the association. In return companies are represented and supported by the branch association in different ways. A significant aspect in the open communication between associations and government is a discussion group. In this group all the associations, consumer organisations and Food and Consumer product Safety Authority (VWA) are represented and will discuss the introduction of legislation concerning food.

Brief description of approach and outcomes to date

Hygiene guides:

Branch associations, who represent a certain food chain, have taken the initiative to develop branch specific hygiene guides concerning food safety based on a HACCP. The basic characteristics of the hygiene guides were:

- ◆ assuring that the food prepared in that sector is safe,
- ◆ providing basic pre-requisite hygiene advice and instructions related to food safety,
- ◆ using terminology that is understandable, taking into account the level of education and cultural background of the users of the document.

The Minister of Public Health and the consumer organisations received this initiative with enthusiasm. They agreed to discuss these hygiene guides in the aforementioned discussion group. After discussion and agreement by the Food and Consumer product Safety Authority (VWA) the hygiene guide receives an approval by the Minister of Public Health for a period of 4 years. After these time period, the hygiene guide needs to be evaluated for a new approval. Between 1997 and 1999, more than 25 hygiene guides have received such an approval. The legal articles are formulated in a way that the food business owner has a choice about the way he chooses to implement food safety: developing and implementing his own food safety system or implementing an approved HACCP based hygiene guide. Food businesses not

operating according to a food safety system or hygiene guide are considered to be committing a legal offence.

In 2001, the first hygiene guides were evaluated. One of the changes and improvements was the introduction of microbiological verification criteria. It became possible to verify different stages in the process by examining process samples against different microbiological criteria. Currently, there are 10 hygiene guides suitable for SLDB's which contain microbiological verification criteria.

Enforcement:

Referencing HACCP based food safety systems in the legislation and the possibility of hygiene guides doesn't ensure compliance with these regulations. The Inspectorate began in 1998 with enforcing the compliance of the procedures and working instructions related to the food safety systems. This was a big change for the food business as well as for the inspector. In the Netherlands a phased approach of enforcement based on priorities was chosen. An important element of this approach was, and still is the communication with the associations about the priorities before we started the inspections.

This working method has several advantages:

- ◆ The branch associations are enable to communicate these priorities with all the members. This information should stimulate the companies to start working according to the hygiene guide.
- ◆ Possibility for the companies to implement food safety in different stages so that they could get used to secure food safety in a systematic way.
- ◆ Instructions for the inspector are limited to the agreed and established priorities
- ◆ Registration of the inspection results will give an overview about the level of observance of the instructions in the hygiene guides.

Results:

The Netherlands have controlled food safety in the above-mentioned way for the last 7 or 8 years and (almost) every company is familiar with a hygiene guide.

Based on past results, we pointed out several priorities (targets, related to CCP's) which the Inspectorate will check during every inspection on such location. These priorities are:

- ◆ Receiving and storage raw materials / goods
- ◆ Temperature (storage / preparation)
- ◆ Cleaning and disinfecting
- ◆ Cross contamination

Following steps are taken into account to come to a conclusion on sufficient guaranteed CCP's:

- ◆ Instructions and procedures related to the priorities in the hygiene guide
- ◆ Acting conformance procedures by the owner and his personnel, implementing the right control measurements and sufficient corrective action if necessary
- ◆ Recording of all measurements available concerning the CCP

Lessons learned and the future

After 7 or 8 years of putting effort in the system of hygiene guides for the SLDB's in The Netherlands we can conclude that:

- ◆ Each food business inspection has changed from a full scope inspection into a target related inspection on critical points. It needs specific instruction or training of the inspector on the specific items of the inspection.
- ◆ This inspection method is standardised. It gives a much better opportunity to monitor the national level of food safety in the different branches and it makes it possible to prioritize.
- ◆ For every type of SLDB there is a suitable hygiene guide. SLDB's are working with hygiene guides, but there are some items that need attention in the near future.
- ◆ The motivation of the owners and staff of the SLDB's to act according to the hygiene guide can be improved in some situations. A further simplification of the hygiene guide is possible.
- ◆ Education of the staff of SLDB's in relation to the hygiene guide can be improved and this could be a topic in the future.

[Need to include a reference on where to see a hygiene guide]

DRAFT

Brazil

Text in preparation

National factors supporting approach

Brief description of the approach and outcomes to date

Lessons learned and the future

Japan

National factors supporting approach

- In Japan, HACCP is not required by national food safety law and regulations.
- A voluntary HACCP & GHP approval system for milk and milk products, meat products, surimi based products, low acid canned food, and soft drink establishments was introduced in the Food Sanitation Law since 1995. However, a huge outbreak associated with milk based drink manufactured in a HACCP-approved establishment was occurred in 2000, it has been still big challenges for both government and industry to enhance the importance of food safety among food safety managers in food manufacturers
- .Since 1998, HACCP Support Law which allow food industries which are interested in introducing HACCP and QA control system based on HACCP principle to update facilities and equipments to easily introduce HACCP by offering low interest rate loan and reduce the tax rate. Under this Law, industry organizations for each commodity develop the approval standards, and ask the approval of the standard by both MAFF and MHLW. Once this standard is approved, member establishments belong to the organization which need low interest rate loan to update facilities (e.g. separating dirty and clean zone) and equipments(e.g. automatic temperature monitoring equipment) can apply the approval of HACCP based plan by the industry organization to use this loan, and receive the benefits of the reduced the tax rate.
- In Japan, food sanitation inspectors are located in national and prefecture government. Even though the review process of the HACCP & GHP documents and on-site verification for the approval by the MHLW is conducted by food sanitation inspectors in the national government, the routine establishment inspections are carried out by food sanitation inspectors who belong to the health department of prefecture government. In both national and prefecture level, HACCP base inspection and advice to get approval was conducted by the designated food sanitation inspectors who took the 3 day training course.
- 17 prefecture governments and large cities (e.g. Tokyo Metropolitan government, more GHP base, Hyogo Prefecture government, HACCP and GHP for meat processing, poultry slaughtering and processing seafood processing, big catering food establishment and box lunch preparation establishments, Wakayama prefecture, Tottori Prefecture, Aichi prefecture, (large careering and lunch box preparation , restaurant for Hotel and Japanese Inn, confection manufacturing, ready to eat food) began voluntary based HACCP approval system for certain food businesses, and other prefecture began activities for the promotion of HACCP into small and medium size food establishments.
- By the financial support from the Ministry of Agriculture and Forestry, the Japan Food Hygiene Association, which is an indurty organization for promoting food safety among

its members, has been conducted HACCP training courses for food industries, and trained HACCP instructors in food industries.

Brief description of the approach and outcomes to date

Since *Escherichia coli* O157:H7 outbreak in Sakai in 1996, the needs to introduce/implement HACCP system in food business has been recognised both industry and government. After the introduction of voluntary based HACCP approval system under the Food Sanitation Law, so far 158 milk processing establishment, 179 milk products manufacturing establishments, 82 meat products manufacturing establishments, 24 surimi based products manufacturing establishment, 36 low acid canned food manufacturing establishments, and 87 soft drink manufacturing establishments got the approval from the Ministry of Health, Labour and Welfare.

Under the HACCP Support Law, 20 industry organizations for different commodities (e.g. frozen food, ready to eat food, lunch box, confectionary and bakery) are developed, and have MHLW/MAFF-approved standards, and 205 establishments developed HACCP Plans and got approval of the plan from the industry organization, and received low interest rate loan from a MAFF related financial organization. In addition, industry food category organizations developed guidance on HACCP, GHP and SSOP developments,

More than 200 food establishments are approved by prefecture government under their HACCP approval system.

From April 2003 to March 2005, 4,166 people took the 1 day basic HACCP training courses, and 580 people took 4 day advanced HACCP training courses, and 36 people took train the trainer courses conducted by the Japan Food Hygiene Association, trained HACCP.

Lessons learned and the future

- The strong commitment from CEO or top of business is needed to introduce HACCP in both large and SLDB.
- An appropriate continuous implementation of HACCP plan is critical than developing HACCP Plan.
- Developing precise flow diagram, especially identifying where and how raw or intermediate materials are reused, is very important to assess the probability of contamination.
- Providing appropriate training for all employees involved in HACCP implementation, and making them understand the role and responsibility of each employee under the HACCP Plan is also a key factor for success.

South Africa

National factors supporting approach

- National legislation creating an enabling framework for making HACCP mandatory in different sectors of the food industry
- An FAO TCP Project conducted to determine, amongst others, the applicability of HACCP principles in street food vending, a type of SLDB
- Hygiene regulations that can be applied in all sectors of the food industry developed as a means of harmonising national hygiene standards

- Strong collaboration between all food control authorities, the industry and the academic sector, through various working groups and committees

Brief description of the approach and outcomes to date

In South Africa, food control is mainly a responsibility of the Agricultural and Health sectors and of the South African Bureau of Standards (SABS).

The Agriculture Sector is responsible for:

- Ensuring Good Agricultural Practices
- The control of Abattoirs
- Developing and enforcing food quality standards
- Certain labelling standards
- Certain imports and exports
- Registration of GMOs
- Registration of agricultural remedies
- National SPS Enquiry Point

In addition, the Department of Agriculture has authorised the PPECB as assignees to conduct physical inspections of perishable products, such as fresh fruits, vegetables, and so on, that are to be exported from South Africa.

The Health Sector is responsible for:

- Developing food safety and nutrition standards
- Food hygiene issues (excluding abattoirs)
- Certain aspects of food labelling
- The quality of certain products
- Certain import activities

The Health Sector operates at 3 levels: National, Provincial and Local. The National Department of Health, through the Directorate: Food Control, is responsible for coordinating food control activities within the country, developing policy and legislation, supporting provinces and local authorities and it is the National Codex Contact Point. The Provincial Departments of Health (of which there are nine) are responsible for coordinating, amongst others, food control activities within the province, developing provincial norms and standards, supporting and monitoring local authorities and for rendering specialist services such as port health services on behalf of the national department. Local authorities are responsible for enforcing legislation, health promotion activities, investigating complaints, identifying and controlling health hazards, compliance monitoring and inter-sectoral collaboration. At provincial and local levels, the Environmental Health Services of the relevant authorities are responsible for these functions.

The regulatory division of the SABS administers compulsory specifications (Technical Regulations) on behalf of the Minister of Trade and Industry for:

- Canned and frozen fishery products
- Canned meat products

The minimum requirements of these specifications are based on GMP and GHP and also contain minimum consumer safety, compositional, quality and labelling requirements. The SABS inspection system is based on the surveillance and conformity assessment of factories, fishing vessels, processes and products. These specifications are also applicable to imported

products. The SABS is also the competent authority for the certification of fish and fishery products for export.

Following several assessments of the South African food control system it was found that the system is inefficient due to the fact that:

- There was no single or coordinated voice or body regarding food control issues;
- Multiple jurisdictions, overlapping and outdated legislation were hampering effective regulation of food in South Africa;
- There was uncoordinated enforcement of the legislation;
- There was no national monitoring programme and no national database;
- All these issues resulted in an ineffective and inefficient utilization of human and other resources.

Several models have been proposed for the new food control system. These include: The multi-agency system, where food control responsibilities are shared between the departments of Health, Agriculture and Trade and Industry. This system is very similar to the current South African food control. It is less favoured as it has the disadvantage of creating a fragmented system lacking coordination between the different agencies in food policy, monitoring and food control. There is also fragmentation between national, provincial and local authorities which results in consumers not receiving the same level of protection throughout South Africa. The single agency system, where there is consolidation of responsibility for food control in a single agency with very clear terms of reference. This system allows for speedy reaction to food safety problems, allows for more effective use of resources including the harmonization of food standards and uniform application of norms and standards. This option is said to have many advantages, but unfortunately does not fall in line with current South African Constitutional arrangements, where some aspects of food control are a provincial competency, and the integrated system, which allows for the separation of policy from operational activities, thus separating risk assessment from risk management functions as it demarcates the role of the authority from that of the inspection agency. Such a system has the advantage of addressing the entire food chain.

Now before any model can be considered, there are factors that need to be taken into consideration:

- Firstly, national constitutional requirements, taking cognisance of the national, provincial and local authority structures
- Current strategic plans of the National Government departments
- Food control activities located in other agencies
- South Africa's obligations to WTO SPS/TBT agreements and other international trade agreements
- Public health protection for all South Africans

In addition, the scope of the food control system must be closely related to the cultural, economic and political conditions of South Africa, covering all agricultural food produced, processed and sold in South Africa, as well as imported food.

So far, what has happened is that there has been restructuring in the Department of Agriculture and specifically the Directorates: Plant Health and Quality, Veterinary Services as well as the creation of several new Directorates, namely:

- The Directorate of Animal Health
- The Directorate of Plant Health
- The Directorate of Food Safety and Quality Assurance and
- The South African Agricultural Food and Quarantine Inspection Services (SAAFQIS).

These are noted as the first step toward the establishment of a single or new integrated food control system. The aim being to begin to address the problems of fragmentation, lack of coordination and wasteful duplication of effort that were identified over the years.

Creating a new Food Control System requires top-level acceptance and approval. Following this, a task team, that can look at the different options and choose the most effective model for the South African situation, can be appointed. This will be followed by the development and/or approval of a policy framework. Then a comprehensive policy regarding the structure, personnel, resources, etc will need to be developed and approved. A relevant Bill will then need to be published and the relevant Act promulgated. Then new regulations will need to be written and implemented accordingly.

From South Africa's experience, it is evident that creating a new food control system, even when deemed necessary and urgent, is not the simplest of things to get done. It was 10 years ago when the need for a new food control system was identified in South Africa. And even though officials at all levels of national and provincial food control agencies, industry representatives, accredited inspection bodies and private inspection groups all agree that restructuring and creation of a National Food Control Authority. is necessary, there is still no real movement in terms of taking a decision regarding which food control system model to follow and taking firm steps to implement it.

Thailand

National factors supporting approach

- National policy for consumer protection and HACCP compliance
- National survey on the readiness for HACCP implementation in food business prior to determination of the time frame for national legislation requiring HACCP in food business
- Single body organising the official inspection process
- Well trained, motivated and resource persons (consultants, official inspectors and third party auditors)
- Strong co-ordination among the academic sector, the industry and trade associations(food safety courses, research, training)

Brief description of the approach and outcomes to date

Due to the export policy and the fact that Thailand has a large number of food factories, the task of the Thai Food and Drug Administration (Thai FDA), under the Ministry of Public Health which is the principal regulatory organisation responsible for the nation's food safety system is overwhelmed. Therefore, the Thai government has set up the National Bureau of Agricultural Commodity and Food Standards (ACFS) under the Ministry of Agriculture and Cooperatives to develop the standards and to oversee food safety of agricultural commodities and food products for export in October 2002. ACFS will also act as a national accreditation

body (only for food and agricultural products) and will accredit the inspection system of the Department of Fisheries, Department of Agriculture, and Department Livestock Development (which are under the authority of the Ministry of Agriculture and Cooperatives) which control the food and agricultural products produced for export. This is the attempt of the Ministry of Agriculture and Cooperatives to harmonize the certification/inspection system and to be internationally recognized. ACFS also tries to improve the compliance of the food export establishments with the importing countries' legislation which requires the food industry to have a food safety management system based on the HACCP principles. The farm-to table approach was also introduced recently, starting from the implementation of Good Agricultural Practice (GAP) at farm level to GMP and HACCP for food establishments.

The Department of Health (under the Ministry of Public Health) is in charge of the food safety in food service sector (restaurants, hotels, canteens, supermarkets, fresh markets, food shops and street vending). In Thailand, there are a huge number of food businesses in food service sector. Most of these businesses are SLDBs.

In brief, ACFS oversees the safety of the food products for export, while the Thai FDA is in charge of safety of the food products produced for domestic consumption and the Department of Health is in charge of food service sector.

The National Food Institute (NFI) was established under the Ministry of Industry in 1996 to facilitate the HACCP implementation, however, NFI has become a certifying representative for Campden and Chorleywood Food Research Association in the U.K., including for EFSIS (European Food Safety Inspection Service) in Thailand causing NFI to lose its role completely as a neutral organisation for development of HACCP system in the country. Therefore, a national center for food safety information and HACCP implementation, including HACCP harmonisation is still needed to implement HACCP in all food sectors effectively.

The pressure from the importing countries is the major factor for HACCP implementation. Therefore, the Thai consumers is needed to be educated in order to pressure the implementation of the HACCP system domestically. However, Thai FDA has issued GMP regulation (which is a basic hygiene regulation that need to be implemented prior to HACCP system) on July 24, 2001. During the implementation of GMP regulation, there are lots of obstacles for small food businesses. Despite assistance from the government, such as providing loans with low interest rate, free consultation, GMP implementation is still not fully implemented all across the country. Thai FDA is now under the process of investigation of the obstacles and trying to fully implement GMP regulation for all food sectors. Consequently, HACCP is still voluntary without the targeted time frame of implementation.

For HACCP implementation, training to get the sufficient number of qualified consultants, auditors and inspectors is necessary. Moreover, training of personnel in the food businesses to create awareness for food safety is also necessary and time consuming. There are HACCP training courses run by NFI, universities and food associations. These courses focus on HACCP documentation system. There are very few courses that focus on food hazard analysis. For Thailand, as well as the other developing countries, more systematic way of training or education needs to be considered.

For the food service sector (under the control of Department of Health), there is no clear direction for HACCP implementation, since application of Codex HACCP to this sector seems very difficult . However, the Department of Health has encouraged the food businesses to join the project called "Clean Food Good Taste" since 2002. Food businesses which pass the basic GHP(Good Hygiene Practice) will receive the "Clean Food Good Taste" mark. This

project is voluntary. There are a number of food businesses including fresh markets that joined this project. The HACCP-based system needs to be developed for this sector.

Lessons learned and the future

To implement GMP or GHP prior to HACCP implementation seems to be working since GMP/GHP implementation is the foundation for HACCP implementation and does not require much knowledge on food hazard analysis which are unseen and difficult to understand for SLDBs.

To develop HACCP system is resource intensive and need harmonisation of the system. In addition, for the food service sector, the appropriate HACCP-based system is needed to be developed. Time required for HACCP implementation is difficult to be targeted. National survey is necessary. The lessons learned during HACCP implementation in the food export sectors and the future are summarised as follows:

| The lessons learned | The future |
|---|---|
| Pressure on HACCP implementation is necessary | National legislation for HACCP implementation should be clearly stated in advance. Policy maker is needed to target the HACCP implementation by risk based prioritization approach. Consumer education is also necessary to pressure the HACCP implementation for food businesses produced foods for domestic. |
| Development of HACCP system is varied. It depends on the third party auditors/inspectors | Central organisation for harmonization of the HACCP system is needed. Moreover, single body organising the official inspection process and control/accredit of both governmental & private third party auditors is also needed to reduce the confusion of the food businesses during the development of HACCP system. |
| Training/education, experience and information on food safety (e.g. food hazards and their control) are not enough for implementing HACCP system effectively. | Systematic way of training for all stakeholders is needed e.g. how to create food safety awareness, hazard analysis for specific food sectors, integration of risk analysis into HACCP system. Therefore, central organisation for development of HACCP system is necessary. |

References

1. Codex Alimentarius. Recommended International Codex of Practice General Principles of Food Hygiene, CAC/RCP 1 - 1969, Rev. 4-2003, including Annex on Hazard Analysis Critical Control Point (HACCP) System and Guidelines for its Application.
2. Discussion paper on the development of risk-based guidance for the use of HACCP-like systems in small businesses, with special reference to developing countries (CX/FH 97/12), prepared by the Netherlands with assistance from the Codex Secretariat and presented at the Codex Committee on Food Hygiene, Washington D.C., 20th-24th October, 1997
3. Discussion paper on HACCP in small and less developed businesses (CX/FH 98/12), prepared by the Netherlands and presented at the Codex Committee on Food Hygiene, Orlando, Florida, 26-30 October, 1998
4. Discussion paper on the implementation of HACCP in small and/or less developed businesses (CX/FH 99/9), prepared by the Netherlands and presented at the Codex Committee on Food Hygiene, Washington DC, 29th November – 4th December, 1999
5. Discussion paper on the application of HACCP in small and/or less developed businesses (SLDB's) (CX/FH 00/10) prepared by the Netherlands and presented at the Codex Committee on Food Hygiene, Washington D.C. 23rd -28th October, 2000
6. Proposed draft guidelines on the application of HACCP in small and/or less developed businesses (CX/FH 01/10) prepared by the Netherlands and presented at the Codex Committee on Food Hygiene, Bangkok, Thailand, 8th -13th October, 2001
7. Consideration of the obstacles to the application of HACCP particularly in small and less developed businesses and approaches to overcome them (CX/FH 03/4-add.1) prepared by the Netherlands and presented at the Codex Committee on Food Hygiene, Orlando, Florida, January 27th- February 1st, 2003
8. Guidance on the regulatory assessment of HACCP. Report of a Joint FAO/WHO Consultation on the Role of Government Agencies in Assessing HACCP. WHO document WHO/FSF/FOS/98.5 World Health Organisation. Geneva, 1998
9. Strategies for implementing HACCP in small and/or less developed businesses. Report of a WHO Consultation. WHO document WHO/SDE/PHE/FOS/99.7 World Health Organisation, Geneva, 1999
10. E. Taylor (2001) HACCP in small companies: benefit or burden? Food Control 12, 217-222
11. N. Anandavally and FAO (2002). A Case Study on Hazard Analysis Critical Control Point System (HACCP): Implementation in India
12. S. Keeratipibul, H. Tutanathorn and FAO (2002). A Case Study on Hazard Analysis Critical Control Points System (HACCP): Implementation in Thailand

13. Department of Trade and Industry (1999) Small and medium enterprise (SME) statistics for the United Kingdom. London: DTI.
14. Food Safety Authority of Ireland (2001) Survey of the implementation of HACCP and food hygiene training in Irish food businesses. www.fsai.ie/industry/haccp/survey_HACCP_july2001.pdf
15. MPA Mortlock, AC Peters and CJ Griffiths (1999) Food Hygiene and hazard analysis critical control point in the United Kingdom food industry: practices, perceptions and attitudes. J. Food Prot. 62: 786-792
16. SJ Gilling, E Taylor, K Kane and JZ Taylor (2001) Successful hazard analysis and critical control point implementation in the United Kingdom: understanding the barriers through the use of a behavioural adherence model. J. Food Prot. 64, 5, 710-715
17. Organisation for Economic Co-operation and Development. (2000) Reducing the risk of policy failure: Challenges for regulatory compliance. www.oecd.org/dataoecd/48/54/1910833.pdf
18. Food Safety Authority of Ireland (2002) National HACCP strategy. www.fsai.ie/industry/haccp/industry_haccp_strategy.asp
19. Food Safety Authority of Ireland (2003) HACCP information pack. www.fsai.ie/publications/haccp/HACCP_CATERING.pdf
www.fsai.ie/publications/haccp/WHAT_IS_HACCP.pdf
www.fsai.ie/publications/haccp/HACCP_TERMINOLOGY.pdf
www.fsai.ie/publications/haccp/HACCP_EXTERNAL_CONSULTANT.pdf
20. Food Safety Authority of Ireland (2003) Baseline Assessment: Hotels http://www.fsai.ie/publications/haccp/HACCP_EXTERNAL_CONSULTANT.pdf
21. Food Safety Authority of Ireland (2004) Guidance Note 11: Assessment of compliance with the HACCP based element (regulation 4.2) of the European Communities (Hygiene of foodstuffs) Regulations 2000 (S.I. No. 165 of 2000) (revision 1) www.fsai.ie
22. PJ Panisello, PC Quantick and MJ Knowles (1999) Toward the implementation of HACCP: results of a UK regional surveys. Food Control, 10, 87-98
23. Osborn AF. (1967) Applied Imagination: Principles and procedures of creative problem solving (third revised edition). Charles Scribner and Sons. New York.
24. Food Standards Agency (2003) Strategy for the wider implementation of HACCP. United Kingdom. www.food.gov.uk/multimedia/pdfs/fsa030203.pdf
25. NEED reference for New Zealand survey document posted during electronic discussion
26. Canadian Food Inspection Agency.(2004) HACCP: a national survey of federally registered meat and poultry establishments. <http://www.inspection.gc.ca/english/anima/meavia/manobl/200407surve.shtml>

27. Risk Management Approach on Food Compliance – Model Strategy, Hashemite Kingdom of Jordan http://www.aqabazone.com/environment/E_Food_Control_Aware.html
28. Food and Consumer Product Safety Authority (VWA) The Netherlands: www.vwa.nl
29. Taylor, E.A. HACCP and SMEs: problems and opportunities. In: Mayes, T & Mortimore, S. (Eds.) *Making the Most of HACCP*. Cambridge: Woodhead Publishing Ltd. 2001.
30. *Pena, M.Q.* and FAO, (2002) A Case Study on Hazard Analysis Critical Control Point System (HACCP): Implementation in Chile
31. *Gelli, D* (2002) A Case Study on Hazard Analysis Critical Control Point System (HACCP): Implementation in Brasil.
32. Canadian HACCP adaptation Program [need complete reference]
33. CIESI, Research Center for Economy and International Competitiveness, Universidad Javeriana, CIESI web site www.puj.edu.co/centro/cieci/index.html [check full reference]
34. SAG, Department of Agriculture, Chile, www.sag.gob.cl/framearea.asp?cod=35. [check ref]
35. SENASA, Department of Agriculture, Argentina. www.senasa.gov.ar/marcolegal/Res_RZ/rz_134_96_cont_1.htm [check ref]
36. IPEH, Peruvian Asparagus and Vegetables Institute and PROMPEX, Peruvian Commission for Exports Promotion, IPEH website: www.ipeh.org/index.asp; Prompex website: www.prompex.gob.pe; IICA case reference: www.infoagro.net/shared/docs/a3/CODEX_PERU.pdf
37. CITA web site www.cita.ucr.ac.cr
38. www.nssc.ca The National Seafood Sector Council, Canada [full reference needed]