

**Food safety
and its regulation**

What can the Netherlands learn from the US?

Conference paper

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The Executive Exchange Network

The Executive Exchange Network brings together a small group of high-ranking government officials, captains of industry and civil entrepreneurs for debates on the future of the public domain. The Network intends to combine knowledge and experience on civil entrepreneurship, public management and corporate citizenship to look for new strategic models and concepts. Therefore the Network wants to know: what are the lessons learned abroad in managing the public domain? To this purpose facts, developments and trends are gathered, compared and discussed. International experts are consulted and foreign programs, policies and practices are assessed for their possible use in the Netherlands.

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Introduction

The last years the developed world has experienced some serious incidents with food safety: Bovine Spongiform Encephalopathy (BSE), Food & Mouth disease and large Salmonella incidents were the most remarkable of these. Lately, the introduction of Genetically Modified Foods and the Anthrax threats have increased the awareness of the public that food safety is a major issue.

While some incidents were contained and national by nature, most of them have become widespread and international outbreaks. The cry for regulation, harmonization and enforcement has spread accordingly. It is therefore of utmost importance to exchange ideas, theories, research and practices on quality control, risk management and inspection of food production between countries.

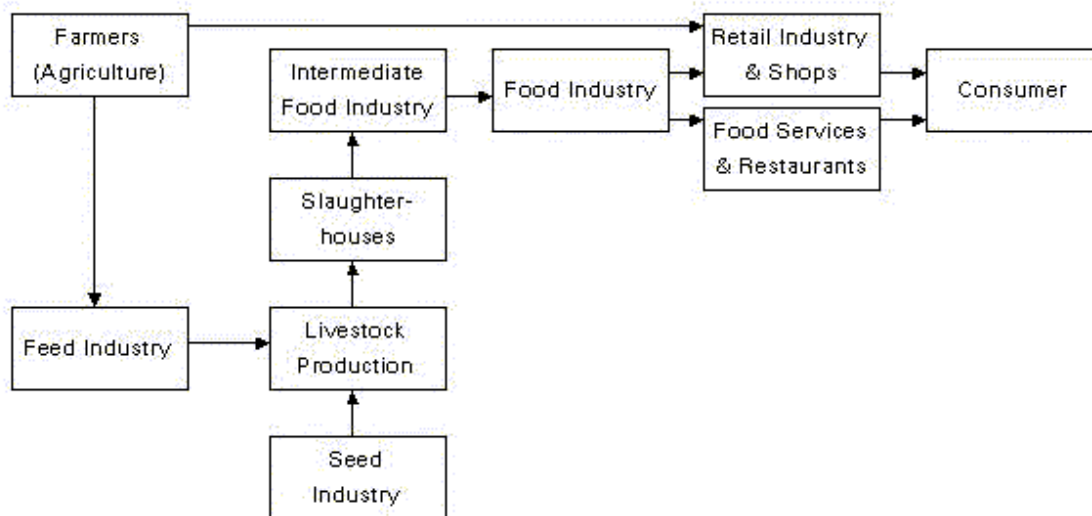
The Executive Exchange Network, in its meeting of February 2002, discussed the practices and developments in the United States, the European Union and the Netherlands. The upcoming establishment of both the European and the Dutch Food Authorities were the reasons for dedicating this meeting to Food Safety Issues.

Mrs. Caren Wilcox, Former Deputy Under Secretary for Food Safety in the United States, described the elaborate US system for guaranteeing food safety and presented important lessons learned from her experience during the Clinton Administration. *Mr. W. de Wit*, project director of the Dutch Food Authority, described the process of conceiving and establishing the Dutch Food Authority and made remarks on the ongoing debate on the organizational setup and division of responsibilities between the Ministries involved.

This paper is an account of their presentations and the discussion that followed. The increased complexity of the food chain is one of the main causes of food safety issues as well as the complexity of its regulation. This paper will reflect this complexity, by addressing the topics in a loosely connected way. The main objective is to gain insight in options that can help in achieving a better optimum in food supply and safety.

The food supply chain and its management

We have all heard stories of elderly in our societies, complaining about children and their lack of knowledge on food issues. ‘They do not know where food comes from. They think milk is produced by a factory and strawberries grow all year round’. What is reflected in these remarks is the growing complexity of the food supply chain. Milk is indeed no longer delivered by the farmer next door but bought in a supermarket. And the components of microwave meals are not recognizable as animal, grain or vegetable. In the Western world of today we indeed have become estranged from food production.



The old chain from farmers and fishermen to the market hall still does exist for organically grown vegetables and fresh fish. Alongside these rather direct chains, several other chains have developed: from African farmer to American frozen meals, from Dutch piglet farmer to Spanish Serrano specialty shop. More and more parties have been involved in the food chain and its length has grown.

Food supply has also become increasingly international or global. Distribution and transportation have developed accordingly. Recent outbreaks of animal diseases like swine fever and foot and mouth in a number of countries are examples of this increased international dimension. Dutch potatoes are being washed and packed in Spain, Danish shrimps are peeled in Morocco, and Kenyan beans are processed in Germany. Not only are European consumers able to buy any vegetable or fruit any time of the year (distribution of products), the handling of products is also spread around the world, mainly as a result of the differences in labor costs (distribution of processes).

Another trait of the modern food supply chain is its highly technical character. In livestock production (artificial insemination, division in farmers of very short life stages, housing of animals in flats), in dairy (robotic milking), as well as in agriculture (elaborate pesticide programs) and food preparation (microwaves, for instance) technology has advanced immensely.

In short, there are six ways in which the food production chain has become more complex in the last decades:

1. The chain has become longer and multi-tracked: more parties have been involved;
2. The geographical complexity has grown: the parties involved in handling a product are spread around the world;
3. The preparation of food has disappeared from the household: consumers are seldom involved in the process slaughtering animals and take away food has become an increasingly popular consumer good. Other parties, like food processors and preparators, have been incorporated in the food chain;
4. Advanced technology has been introduced: processing and conservation technologies have developed to a highly technical degree;
5. The turnover, production and distribution speed of food has grown;
6. The consumers have become more demanding: quality, guarantees and safety have become more and more important.

The complexity of the food chain dictates the difficulty of its management.

Risks in food production

In every stage of the food production process something can go wrong. This is not the case for all kinds of contamination, but it is true for most of them. With each new link in the food chain possible health risks are added to the food production.

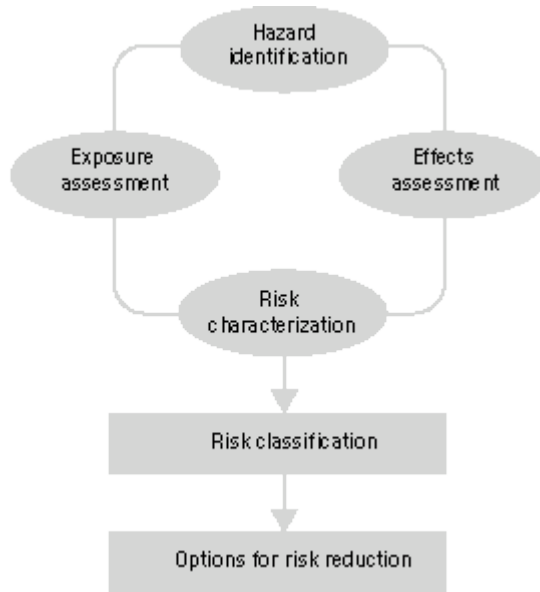
Link in the chain	Examples of possible contamination	Other issues involved
Farmer	Pesticides	Environmental issues, GMO's, fair trade issues
Feed industry	PCB's, microbes, additives	
Livestock production	Zoönoses, microbes, pcb's etc.	Animal welfare Environmental issues
Slaughterhouses	Microbes & suspected meat	
Food industry	Additives, microbes, cleaning procedures	Medical/ Nutritional supplements
Food services	Expiring dates, microbes	
Retail industry	Expiring dates, microbes	Fair trade issues
Distribution	Expiring dates, microbes	Environmental issues
Consumers	Expiring dates, microbes	Public confidence in government or in private companies

Because of the length of the food chain it is hard to track and trace the exact source of contamination. Not only are links in the food chain manifold, other factors, like time, are complicating the matter. Some compounds only pose a risk to human health when taken daily over a long period of time. And what to think of salt and sugar? If these compounds were to be assessed today, they would probably be forbidden by the Food and Drug Administration or the Dutch Keuringsdienst van Waren

The time factor is even more crucial when infections and zoönoses are involved with a very long incubation time. The best example of this is BSE, posing a risk to human health after a long time span. This example shows that new and unknown risks develop in our world, in a complex way related to our food production.

Not only has the management of food chains become more complex, the risks to manage have become more complex themselves as well.

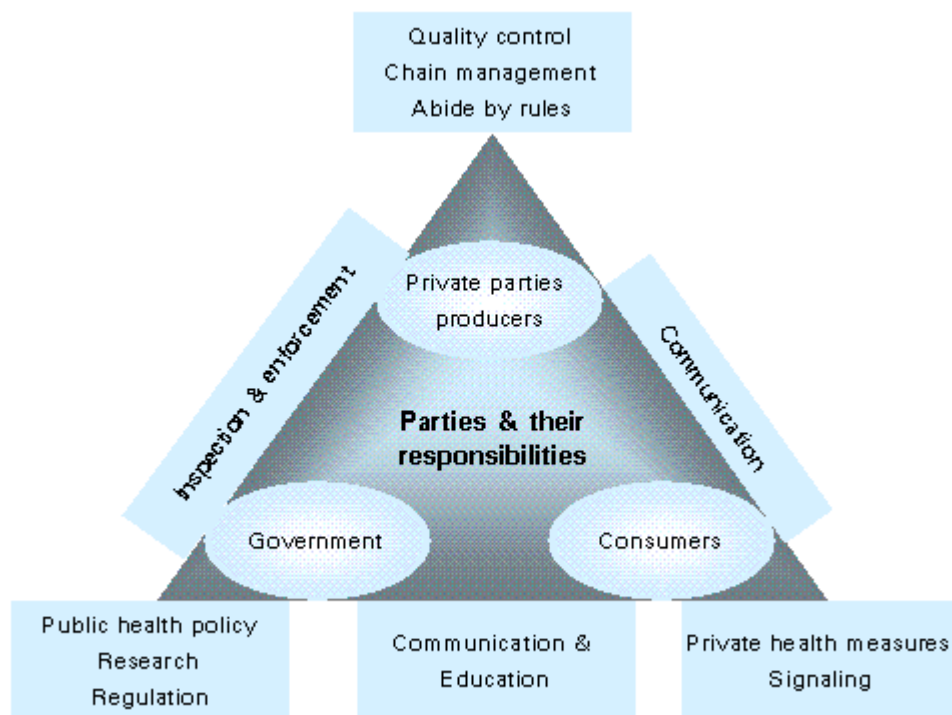
Risk management



Risk management is a well developed system, only being in need of diligence and money to carry it out. It starts with risk assessment and analysis, an elaborate task considering the numerous types of possible risks and the lack of knowledge we sometimes have of them. Having characterized and classified the risks, the second step is taking risk-reducing measures. Setting priorities and developing appropriate measures is most important. However, the measures must be possible to carry out and in proportion to the risk. Here, one must not only rely on scientific judgment but include common values, politics and ethics as well. The lack of knowledge is even larger in these areas than in the area of risk assessment. The last step is risk communication, where the ability to obtain, understand and communicate solid accurate information is vital.

Who should manage the risks?

Risk management in food production is not something that can be done by one party. All parties involved bear some of the responsibility, not only the parties in the supply chain, but also consumers and governments. Consumers are responsible to get informed and act accordingly. Getting ill because of bad food preparation is only the cook's fault. Consumers also have the task to inform the proper authorities when they acquire a food related disease, for instance in a restaurant. A government has the responsibility for public health. Last but not least, private parties are responsible for the products they produce.



Private parties – what can they do?

The food industry and large super market companies are trying to develop vertical integrated management systems to ensure the quality and safety of food. These include inventory-tracking systems, ingredient and packaging specifications and quality criteria for farmers, manufacturers and shippers, et cetera. Vertical integrated companies are in the best position to manage throughout the chain, but it will never be easy. Vertical

integration might even present other problems, for instance in the area of competition or fair trade discussions.

Recalls

Especially in recall procedures, the tracking and tracing of products is vital. Knowing where your products went is essential to minimize the health-related and economic damage. The importance of tracking and tracing in the food chain has therefore expanded the use of ICT in the food production chain.

The cases of BSE and PCB’s in chickens and eggs show the importance of tracking and tracing at the beginning of the chain. Almost every farmer in the Netherlands is nowadays on line and connected to his clients and providers. But this ‘connectedness’ is quite contrary to traditional agriculture, where private, individual ownership of land determines your identity as a farmer. This cultural dimension should be considered as a barrier of further development of food chain management.

In most of the recall cases ads are placed in newspapers to inform and instruct consumers. It is very difficult however to reach the public with this medium, and ads should only be used when the risks are not too high. To improve the recall rate, systems are being set up to trace the products back to each consumer. In the United States one retail company is already working with a system that can trace packages to individual consumers. In case of a recall, this company is able to phone the consumers that have bought the product directly.

Some recall-cases in the Netherlands and Belgium:

Product	Year	What?	Recall costs
Coca Cola	1999	Fungicides & Sulfides	60 million euro
Chicken & eggs	1999	Dioxins in feed & meat	?
Pigs	1997-1999	Swine fever	10 million pigs
Brinta	1990-1999	Salmonella	3 million euro
Raak cassis	1993	Primaricine	150.000 bottles
Toddler food Nutricia	1993	PTSA (cleaning compound)	18 million euro
Perrier	1990	Benzene	1 million euro

Recalls are sometimes initiated by the industry and sometimes required by food inspectorates or authorities. These authorities must account for the costs involved. This might lead to discussion between authorities and producers when there are different views about the risks assessed. A case in the Netherlands can serve as an example. In toddler food traces of cleaning materials were found. The producer and the food authority had a serious argument about the risk this specific compound posed to the consumers. Nonetheless, after a thorough debate the toddler food has been taken of the shelves.

Quality control and self-regulation

Traditionally, food producers have organized their quality control themselves. For instance, the meat, dairy and poultry industry have a long history in establishing standards in food safety and quality and enforcing these upon themselves. Remember the diplomas on the butcher's wall or the local dairy plants, owned and run by farmers, that show a deeply felt responsibility and commitment for the quality of their milk, cheese and butter.

It seems to be a waste not to make use of these traditional systems. Apart from chain management, enforced by the last shackle of the food chain (mostly retail companies), other shackles in the system are able to set up quality systems themselves. There are a lot of self-regulation systems that can be incorporated in national or even international food safety systems:

	Obligatory	Scope	Innovation	Convenient	Inexpensive
<i>Accreditation</i>	+	+/-	-	+/-	-
<i>Certification</i>	+	+/-	-	+/-	-
<i>Visitation</i>	+/-	+/-	+/-	+/-	-
<i>Registration</i>	-	+/-	+/-	+	+
<i>Vision</i>	-	+	+	+/-	+/-
<i>Code of conduct</i>	+/-	+/-	+/-	+	+
<i>Training</i>	-	+	+	+	-

The remaining dilemma is the so-called 'free riders'. The free riders are mostly smaller companies, with no particular brand name or image to protect, that profit from measures the bigger companies take to enhance their image. However it is in the interest of the whole sector to ensure quality. This calls for broader action than the effort made by the companies with the biggest interests.

Involvement in food safety of public parties

Alongside the measures the food production chain itself is taking, responsibility remains for governments to ensure the general public the safety of food. Adaptation or incorporation of the measures private parties do take is a first step to enhance the effectiveness of food authorities and inspections. Setting up a system however is difficult and constant revisions of the quality system are essential to keep up with the changes in the production system.

The process of Control or Inspection

The inspection and enforcement process consists of the following steps:

- a) Information gathering
- b) Judgement
- c) Enforcement
- d) System regulations
- e) Communication

a) Information management

Information gathering is very difficult in the food chain, not only because of its size, but also because of its complexity. The amount of and the speed in which feed, food and animals are transported all over the world is tremendous. The information-overload is not only a threat to the inspectorates, but also to the producers. Information gathering must be in balance with the chance of contamination, and with the quantity and severity of the health-hazard posed. Information-management in inspection is therefore foremost a matter of risk assessment, priority setting and taking the appropriate actions.

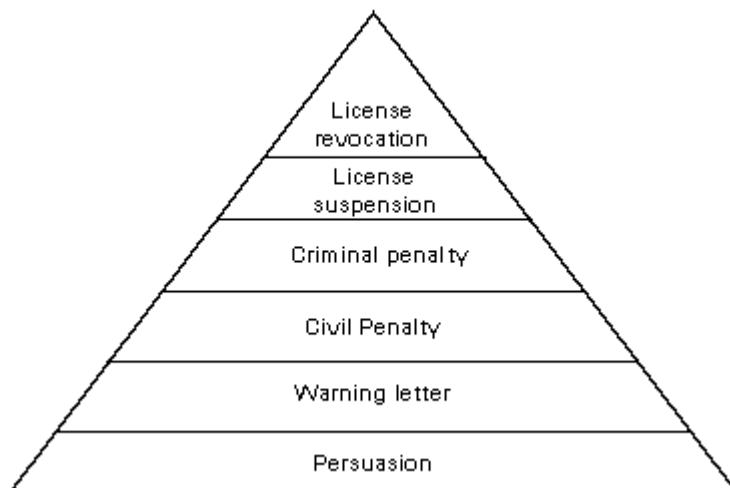
b) Judgement

Judgements about risks tend to be more politically driven than professionally, especially with incidents that get public attention. An empirical approach, rather than a normative or moral one should be followed. Even the public demands sound, evidence-based, rather than normative judgements about health-related matters. The cry for immediate action might occasionally be loud, but in the end rationality prevails, even in acute situations.

c) Enforcement

The enforcement of regulations could be stricter; at least that is what a lot of cases have proven in the last ten years. It is important to understand that enforcement has a number of levels:

The enforcement pyramid



Persuasion by way of training, scientific meetings and agreements is the least strict enforcement measure, the revocation of a license is the most far reaching measurement, taking a company out of business.

d) System regulations

Food safety might be better enforced with system regulations than with strict inspections and enforcement measures. Although the general public wants direct action in disastrous cases, it is important to stick to procedures and the system, once it is set up. Officials could then make symbolic interventions to please the public, rather than punish producers that comply with the rules of the system. It is also important to ensure that rules are being applied equally to everyone.

e) Communication & education

An important task of inspectors is communication with the general public and with the industry. This task is often neglected. The general public must be knowledgeable about what they themselves can and must do, the choices they have in food consumption, and the measures that government officials take.

Food Authority – how to gain it?

Apart from carrying out risk assessment diligently and setting up a quality control systems, public food authorities or inspectorates must develop other elements of their functioning. Of these, independence and authority are most important.

Independence

With respect to the independent position of a food authority and authorities in general several constructions are being used:

Construction	Able to bypass the Minister	Country	Example
Part of a Ministry	No	Netherlands	CPB, CBS
Inspectorate General	Yes	Netherlands, US	IG of education
Private organization	No	Netherlands	Dairy
Agencies	Sometimes	Netherlands	Ned. Bank
Appointed for life	Yes	Germany	National Bank
Politically chosen	Yes	US	FDA

Independence of politics

In the Netherlands the first four constructions are used. In the debate on the restructuring of the Food Authority, the legal construction and place of the new authority are given much thought. While independence is very important, especially in high profile cases with a lot of media attention, it is also a myth. There will always be a politically responsible person, for example a Minister, who has to address questions raised by parliament on incidents and measures taken. Whether an Inspector General or Authority decides, the Minister will demand control so he can answer these questions properly. Therefore, the Minister will want to have a say in the regulations and the enforcement.

This dependence on politics can be problematic. Politicians have their own idea of time, and often want actions taken sooner than regulators are ready assessing and solving the problems at hand. While changes in the system, e.g. livestock production, will take years to be implemented, parliaments and the general public often want immediate action and visible solutions within days.

Independence of the field

Independence of the industry under control is also very important. In the case of inspection of slaughterhouses, there has always been a tradition of cooperation between inspectors and slaughters. Inspectors are working in the same slaughterhouses for longer periods of time, with the effect that on Fridays they take home their steaks for the weekend. This is an practice in which the inspectors are too close involved in the industry. Their independence can be questioned and the enforcement of regulations can be problematic.

Independence also has to do with expertise. Regulations can only be enforced when one is knowledgeable about what is going on: What are the newest scientific insights? Which technologies are being developed? What risks do these technologies pose? What kind of regulation could be used? When inspectors do not have this expertise, they have to rely on the expertise of people in the industry, and risk losing their independence.

Sometimes, in technologically advanced sectors, the expertise of people in the sector must be incorporated in the system. In flight safety regulation, an international forum of airplane companies, professional aviators and inspectors define together the norms and rules one has to comply to. This is an example of public-private cooperation. Once the norms are set, government inspectorates enforce them on every aviator and all airplanes.

In this case, the sharing of responsibilities between public and private partners has proven to be a powerful and successful system. The success of it is linked to the interests of the industry. If flight safety is jeopardized no one will want to fly. This kind of public-private cooperation will therefore not be applicable to all kinds of safety systems.

Independence of other Authorities

Especially in countries where the agriculture has an important impact on the national economies (for example in the US and the Netherlands) the activities of the food safety authorities and of the competition authorities are likely to cross. The markets for food, raw materials, components and end-user products are becoming increasingly international, but not without wars to be won. The international competition authorities will defend free trade and food authorities will defend food safety. Both have different interests that are not necessarily in line with each other.

At the same time, food safety can be used as an excuse to enforce or defend import restrictions. The case of foot and mouth disease is on of the saddest examples we have experienced, showing this conflict of interests.

Case of foot and mouth disease and vaccines

Foot and mouth disease is not affecting the safety of the meat or the health of consumers. It is however, sincerely affecting the health of animals. Treating the disease is not a problem, a vaccine is available. However, the vaccine can not be traced in the blood of the animals (although progress has been made by scientist to). It is therefore impossible to distinguish a vaccinated animal from an infected one. As a result some countries do not want to import vaccinated animals because tracing of the infected animals is not possible. This refusal to import vaccinated beef has cost the life of millions of animals in Europe during the outbreak of foot and mouth disease in 1999-2000.

Competition

Another conflict of interest might occur when food authorities want to enforce quality measures on an entire industry. Competition law prohibits deals that affects fair competition between industry participants and new entrants. And is particularly strict when pricing is involved. Nevertheless, measures taken by food authorities might in fact improve (quality of) the playing field for an industry as a total.

In the debate on free markets for food, some religious or religiously inspired arguments do play a role, too.

Case Kosher versus Genetically Modified food

The Islamic and Jewish countries are allowed to defend their import restriction on pig and other non-kosher or non-halal food. This has frustrated some European citizens who want to have a ban on genetically modified food, claiming to have religious considerations too. In the soy case, where the soy was genetically changed to become more resistant to specific pesticides, the debate was fierce. 'If God would have wanted soy to withstand certain pesticides, he would have created them that way'.

Concluding, the financial aspects of free trade do have an impact on the debate on food safety measures.

International food authorities

The establishment of international authorities, for instance the European authority, could also construct potential battlefields for national food authorities. The European Food Authority will be able to overrule the national authorities, and diminish their independence. Given the international nature of the food chain, this might be the most effective. However, national traits or aspects of food production are very difficult to incorporate in the European quality and safety systems. A balance has been found.

Independence of the public?

Although one might argue that food authorities and inspectorates are serving the public, they have also have to maintain a certain independence or distance. The public and its media sometimes demand attention for risks that do not necessarily exist in reality. Food authorities should carried out research, be clear about facts, and communicate with the public. In this way entanglement in unnecessary debates is prevented. Most important however is to take the worries of the general public seriously.

Case shrimps

In 2001 a public debate on shrimps emerged in Northern Europe. A trace of a risky compound was found in shrimps, which were peeled in former Eastern European countries. The amount of the compound found, however, was so small that one could speak of homeopathic proportions. It is most probable that its origin was to be found in the sea, and not in the handling of the shrimps. It most certainly was not a food safety issue.

Authority – a vital aspect

Instead of independence or enforcement, establishing authority might be a better strategy to operate effectively. Authority is necessary in relation to the public, the political arena, and most of all to the actors in the field. Nevertheless, building up authority is a subtle process that is composed of a number of aspects:



Building up authority in the food chain

These aspects can contribute in establishing the authority of inspectorates. But its establishments is also rooted in the social, cultural, historical, economical, moral and legal structure of the industry at hand. In a technologically advanced or developing industry, the need for expertise is higher than in an industry with moderate changes. In a morally well-developed industry the need for severe enforcement measures is not as high as in lesser developed sectors of society. The same is true for companies whose brand names and reputations are at stake. These companies will be very careful themselves about the brand and reputation they have built up.

Constant adaptation to traits, changes and developments of the food chain, is essential for a Food Authority to function effectively and efficiently.

'Only in growth, reform, and change, paradoxically enough, is true security to be found'
.Anne Morrow Lindbergh, 1940

Lessons learned

1. Criminal law is not sufficient to guarantee safe food production

The hypothesis that the claim culture in the legal system of the United States would enforce food safety and make food authorities abundant, is not true.

The most important reason is evidence gathering. When suing a producer for food contamination it is extremely hard to get evidence. Since there are many potential sources and places for contamination it is very difficult to establish a clear link between the contamination and the suspect.

Second, suing is very expensive and it will take a long time to get a verdict. Safety measures have to be taken immediately, and can not await the end of a trial. Next to the trial, an authority is needed to take immediate action when the health of the public is at stake.

Third, the outcome of a successful trial is a fine or penalty (in case of a guilty verdict). This will result in a financial loss and reputation damage of the company involved. However, what happens if no reputation is at stake? Only in case of a well known industry player the trial will have a preventive effect and serve as an example for other producers.

Therefore, even when a suing culture exists, it is not often that a food contamination trial is tried. This explains why the United States does not have a large public system to control the quality and safety of food which does not differ very much from the European systems.

2. Crisis management should be organized

The recent outbreaks of animal diseases and other health-related incidents (legionella) have shown the need for a well-organized national and international crisis management team. The US has set up an interdepartmental group to manage and communicate incidents. This group is able to coordinate actions and has authority to reach across all departments in the case of a major crisis. One of its main tasks is the communication with the public. When not handling emergencies the group is developing new procedures and communication protocols. Setting up a structure with clear command and control lines could prevent mistakes and delays. It should learn from past crises and related structures (fire departments, the military and so on) and define best practices in handling food emergencies.

3. Legal framework for authorities and inspectorates

An interesting aspect of the US Inspectorates is the similarity of their structure, system and functioning. A federal law has been designed with clear instruction on how to set up Inspectorates and Authorities. This single legal framework for all authorities creates unified way of handling inspectorates. In the Netherlands a lot of time and effort is still spend on setting up and establishing authorities, since no clear and unified frame of reference is used.

4. Living in the risk society – the need for trust

All this lessons must be seen in its historical and cultural context. The food has never been as safe as it is nowadays in western society, despite the complexity of its production. It is however, exactly this complexity that is the reason for increasing public concern about food safety. The largest part of the public is not involved in food production; agriculture, livestock production or preparation. Large companies bear the responsibility for safety, but are not trusted by the public. And food is only one of the areas where the public feels insecure and doesn't trust either private companies nor its governments. Is it obsessed with risk?

Preoccupation with risks can indeed be seen as a feature of modern society. Whether this trait is caused by higher and bigger risks, or with a change in perception of the public is a subject of ongoing debates. But the public is clearly lacking trust, although trust is a very important aspect of the functioning of society. It is part of economic processes, a requirement for democratic participation, and an essential part of the 'social capital'. The food safety crisis can be better described as a lack of public trust than a lack of safety.

Trust is build up with several factors. The most important ones are:

- Competence – the idea that someone knows what he is talking about
- Care – the idea that someone has compassion, is open and has an eye for justice
- Values – the idea that someone shares the same values, and therefor can take the right decisions
- Commercial interests – working in two ways; building trust because companies cannot afford risks, but also diminishing it, because commercial iterests can be a reason to hide facts
- Facts – are strangely enough the least important in building trust

The importance of public trust does not mean that objectively defined food safety could be disgarded. It will remain necessary however, for producers and governments alike, to include other trust-building measures. A way forward could be a dialogue which takes the concerns of the general public seriously.

5. Setting up a food authority

Important in establishing a new organization for food safety issues is communicating its role and function. The Dutch Food Authority, which is currently under construction, cannot be communicated to the general public. Its set up and organizational structure is too complicated and responsibilities scattered. In the United States it is common to ask the National Academy of Sciences for advice if things are getting complicated and parties feel a need for an independent outside perspective. In this case societal resources outside the government help to balance arguments and alternatives.

6. Demands of consumers

A new tendency has been displayed: consumers are demanding the right of inspection. They call the government and ask for a visit of inspectors. Although positive in nature, the development is dangerous because responsibilities are destroyed and the costs involved are enormous. People are looking for order and control. Government needs to communicate again and again in what way people can do things for themselves. It is important to realize that complete safety is only possible in a totalitarian state.

7. Stick to the system

The public will demand immediate action when something is wrong. Politicians want to act and do things to satisfy the general public. In these situations it is important to stick to the system. Sometime oil disasters are best handled by doing nothing; nevertheless the general public wants a reaction. The responsible officials should make symbolic interventions to please the public, but first they will have to make sure that the rules have been applied equally to everyone, only then their action will be believable and justified.

Founding fathers



Public SPACE is the knowledge and research center of Boer & Croon Strategy and Management Group, a leading consultancy and interim management firm based in the Netherlands. Public SPACE focuses on complex and innovative strategic interaction between government, civil organizations and private corporations for public purposes. Its mission is to design and implement innovative and sustainable strategies for the production of public services and public goods. Public SPACE investigates the modern dynamics of public and private domains and develops constructive partnerships between public and private parties.



The Netherlands School of Public Administration (NSPA) develops and provides vocational programs at postgraduate level, specifically geared to the public sector. Its founding was prompted by the observation that there were no postgraduate courses which did full justice to the goals and culture of the public sector. After all, the forces operating in the arena of public sector management differ fundamentally from those in a market organization.



De Baak is the Management Center of the VNO-NCW, the association of the largest employers' organizations in The Netherlands. If doing the right things is what it's all about, then the choices made by the company and the entrepreneur provide the context. You will find that attention is given to strategy and to charting one's own particular course in all of our activities: training courses, individual counseling, introductory meetings, activities of de Baak Circle, and the literature service.