STRUCTURE AND ORGANISATION OF VETERINARY SERVICES TO IMPLEMENT THE CONCEPT ‘FROM THE STABLE TO THE TABLE’

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Summary: The control of food safety has undergone profound changes and is now seen in terms of a global approach, ‘from the stable to the table’. The risks themselves have evolved, notably due to changing practices, and this, coupled with increased knowledge and more stringent requirements, has led to a more global conception of production chains.

Targeted control of the final product is gradually being replaced by control of production processes and an integrated approach to hazards throughout the production chain, with a new distribution of responsibilities between the producers and manufacturers and the administration. The latter, however, remains the final guarantor of the safety of products.

At the international level, the SPS Agreement has made risk analysis a methodological reference, now adopted by the competent standard-setting bodies. To ensure consistency between standards, convergence is being sought between the work of the OIE and the Codex Alimentarius Commission.

The organisation of control services must adapt to these changes and enable a continuum and a control of information throughout the production chain. The Veterinary Services, present in the early stages of production, have a legitimate role in this context. The questionnaire returns from 31 countries clearly show a diversity of organisational structures, but reveal an underlying trend to consolidate control responsibilities ‘from the stable to the table’.

The cost and feasibility of the measures must be taken into account in management decision-making.

1. INTRODUCTION

For a variety of reasons, food safety is becoming an increasingly important issue worldwide. There have been profound changes in the context of action of the control services, related to the increase in international relations and trade.

The trend in food safety is increasingly to consider risks and their management throughout the entire chain of production and distribution, ‘from the stable to the table’, in other words from pre-processing stages (including animal feed, veterinary medicinal products and phytosanitary products) to the final consumer. In some countries this could mean having to make organisational changes, if existing structures are unsuited to this type of approach.

The Veterinary Services play a key role in the prevention and management of food-borne zoonotic hazards, even when animals do not present clinical signs.

In this context, the 20th Conference of the OIE Regional Commission for Europe, held in September 2002, discussed a Technical Item on “The role of Veterinary Services in the food chain ‘from the stable to the table’”, notably emphasising the concepts of risk analysis (10, 17). The present paper follows on from that work and is more particularly concerned with the institutional issues and the structure and organisation of the Veterinary Services.
It is based on a questionnaire sent out to 50 Member Countries, to which 31 countries replied:

- Austria, Azerbaijan, Belarus, Belgium, Czech Republic, Cyprus, Denmark, Estonia, Finland, France, Georgia, Germany, Iceland, Ireland, Israel, Italy, Latvia, Lithuania, Luxembourg, Netherlands, Poland, Portugal, Romania, Russia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey, Ukraine.

- The replies from Croatia, Greece, Norway and the United Kingdom were received after the deadline and have not been taken into account.

**Important note.** The presentation will necessarily be schematic in form, summarising in broad outline concepts that are complex and interlinked. The theoretical or practical adoption of the concept ‘from the stable to the table’ differs greatly from one country to another and, in a given country, from one branch of activity to another. These variations and relative differences will not be systematically referred to but the reader should keep them in mind.

2. **THE CONCEPT ‘FROM THE STABLE TO THE TABLE’**

The concept ‘from the stable to the table’ is part of an evolving process.

2.1. **An increasingly integrated scientific approach to food safety problems throughout the food chain**

Perceptions of the extent and prevalence of food safety hazards are constantly changing: some hazards are declining (through control or changing contexts), other are emerging or increasing, etc. Advances in knowledge and better analytical tests have helped to identify hazards that were previously unknown or not clearly recognised as such.

The identification of zoonotic hazards in animals that are themselves in good health has led to a change in the very notion of zoonosis (such hazards include microbial agents: *Salmonella enteritidis*, *Campylobacter jejuni*, enterotoxinogenic *Escherichia coli*, *Clostridium perfringens*, *Yersinia enterocolitica* and *Listeria monocytogenes*; and parasitic diseases: trichinellosis, cysticercosis and hydatidosis) (7).

Requirements for the control of physico-chemical contaminants have grown, due to a variety of factors: increasing use of xenobiotics (veterinary drugs, growth promoters), environmental pollution (phytosanitary products, heavy metals, dioxin, marine biotoxins, etc.), improved detection methods, and a better understanding of their impact on consumer health. Yet, only prevention in the early stages of the production chain can stop contamination of foodstuffs.

Changes in farm practices, processing and storage of foodstuffs, food preservation methods and consumer habits have increased the interactions between the various levels in the production chain.

The cycle of contamination between animals, animal feed, the environment, and humans is increasingly well understood, both for pathogens and for physico-chemical contaminants. As a result, the need for integrated hazard control throughout the production chain has gradually come to be recognised by scientists and risk managers.

The bovine spongiform encephalopathy (BSE) crisis and the media coverage it received undoubtedly accelerated an awareness of these problems.

Some sanitary measures are specific to a given contaminant (action taken at the source of contamination) or pathogen (e.g. withdrawal of specified risk material in the case of BSE). Conversely, for many germs, control is achieved mainly through general hygiene measures. A global sanitary approach, in a firm or in a production chain, can thus prevent multiples hazards, identified or otherwise.

Directed microbial ecology could eventually bring about a significant change in approaches to food safety: it raises the possibility of controlling the colonisation of a living product by selecting germs that are neutral or of technological value, which then colonise the medium and prevent potential pathogens from becoming established. These phenomena have always been used empirically to manufacture and preserve products such as cheese or some prepared meat products.
2.2. Risk and risk management concepts are evolving in parallel towards a holistic approach

a) In broad terms, sanitary questions used to be dealt with in a relatively independent manner for each phase of production.

In the interests of food self-sufficiency, the accent was placed on the earlier stages of the production chains (animal and plant health). Foodstuffs were only checked during the primary processing phase, notably through post-mortem inspection at the abattoir.

b) Food controls then developed chiefly based on examining samples of the end product. Products that were found to be of inadequate quality during these inspections were withdrawn from the market.

The use of laboratory analysis enabled contaminants to be detected that were invisible to the naked eye, with limitations inherent in the methods used, the cost, the representativeness of the sample and the delay.

c) Food safety requirements increased, notably due to growing consumer awareness, changes in lifestyle, the increase in vulnerable populations, the lengthening and increased complexity of production and marketing chains and the growth in international trade, but also as a result of evolving risks (see above) and a greater knowledge of them.

Responding to this situation with a traditional approach would have meant multiplying the number of controls and analyses, at a cost out of all proportion to the value of the products. In the absence of any link between the defective product and its history, other products potentially involved could not be recalled, nor could a recurrence of the problem in subsequent batches be prevented. Such an approach offered no scope for action against undetectable contamination.

The need to develop preventive measures, enabling the sanitary quality of all the foodstuffs produced to be controlled, has gradually been recognised, as is the case in other fields of activity. The systems have evolved towards a global procedure for controlling food safety hazards at each stage of production.

d) The preventive management of hazards through the control of production processes, notably using the HACCP¹ method, developed first among agrifood firms, before becoming generalised in earlier stages of the production chain, notably at the abattoir and on the farm.

e) Whereas HACCP-based approaches chiefly concern industry operators, risk analysis has established itself as a tool for public sector managers to determine priorities for action (7, 17). Qualitative and especially quantitative risk assessment is a developing science, notably in the microbiological field. Whatever the response provided so far by the various countries, the question of the separation between risk assessment and risk management tasks has been raised since the food safety crises of recent years.

f) The precautionary principle, the subject of numerous legal debates, is increasingly influencing the choices of decision-makers. It involves taking action on risk management in a climate of scientific uncertainty, while respecting the principles of proportionality and consistency.

g) With the concept of food safety objectives (FSO), food safety is approached in terms of the level of protection that is sought at the time of consumption. Performance criteria are defined (by the administration and by international organisations) and implemented by food animal production operators (3, 7).

h) Lastly, mention should be made of the increasing concerns over animal welfare and their gradual incorporation in the overall approach in the various sectors.

According to the replies to the questionnaire sent to Member Countries, 74% of countries recommend a ‘stable to table’ approach in official documents, and in some cases this approach is enshrined in law.

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¹ HACCP: Hazard Analysis Critical Control Point
3. THE TOOLS AND THE PLAYERS

Changes in approaches and concepts are paralleled to a certain extent by changes in the tools and the players.

The move to a culture of integrated prevention notably implies:

- Measures to ensure the traceability of animals and products throughout the production chain, without any breaks,
- Integration of interventions by professionals at each stage,
- A new distribution of responsibilities between the different players,
- An administration that holds all the information, by means of a harmonised control policy,
- An administration with the capacity to extract information throughout the entire chain.

3.1. The need for traceability

Traceability is an essential tool in integrated approaches to food safety risk management. Downstream, it allows potentially defective products to be recalled and, upstream, the source of the problem can be traced and remedied.

At the processing level, the operator is responsible for traceability (tracing forward to identify batches already produced, or tracing back to the suppliers). The administration verifies its suitability for the objectives that have been set and its effectiveness, within the framework of a second level of controls.

For live animals, however, the administration is responsible for organising animal identification and monitoring of animal movements2. The administration may delegate certain activities in this sphere to professional organisations. It should be noted that identification can serve other objectives besides food safety, and this explains why it may already have been introduced: control of epizootics, subsidies allocated per head of cattle (notably within the framework of the EU Common Agricultural Policy), genetic improvement.

3.2. A new sharing of responsibilities

The integrated approach to sanitary risks in the food chain has led to a redefinition of responsibilities between professionals and the authorities.

Under the traditional approach, responsibility for the sanitary quality of products lies totally with the official services, which control the end product, and may also control production conditions.

At an intermediate level, the operators are responsible for the quality of the products they place on the market, the first level of control still being performed by the official services.

Lastly, the changes now taking place are resulting in a sharing of responsibilities. The operators are responsible for the quality of the products they place on the market and must implement preventive measures, notably based on the HACCP method. The public authorities exercise a second level of control, by verifying the measures taken by the operators. Where they exist, quality assurance systems implemented by livestock production sectors and incorporating HACCP systems are generally accepted and taken into account by the administration (7).

Whatever the system in force, the administration assumes overall and ultimate responsibility with regard to the consumer and for international trade (certification). It therefore needs an overall vision of all the systems, sectors and their interactions, and must be organised accordingly.

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2 Except in the case of highly integrated production chains
3.3. The role of the operators

Countries are having to redefine the responsibilities of producers and the types of partnerships that need to be established.

a) Livestock producers:

Livestock producers are the first sentinels on the farm. They must have sufficient training to be able to detect pathological problems in animals, especially epizootic and zoonotic diseases, and also, in the context of integrated management of food safety, be capable of applying measures that have no visible impact on the live animal (control of drug residues, avian salmonelloses, etc.). Training can best be provided by producers’ organisations, with the technical support of the public services or private veterinarians accredited by the administration.

In addition, an adequate veterinary presence on the farm is a key element in an integrated approach.

The replies to the questionnaire indicate that producers are given responsibilities in 90% of the countries, but in many countries serious weaknesses are reported, regarding producers’ organisations and their qualifications.

b) The abattoir:

The abattoir has always been, and remains, the ideal place for epidemiological surveillance of animal diseases, especially zoonoses. All farm animals pass through the abattoir, thus allowing a link between inspection of the live animal (ante-mortem) and inspection of the carcass (post-mortem). As the first stage in processing, it is here that carcasses and co-products are systematically inspected by the sanitary authorities, samples are taken for analysis (BSE, residues, etc.), etc.

In an integrated approach to food safety, some inspection duties may be delegated to industry professionals, notably in soil-free production systems. This remains strictly supervised by the authorities, whether directly or by accredited agents.

c) Other agro-industries:

Industry managers must have the necessary competencies to apply HACCP principles. The authorities provide a second level of controls; the methodology for these controls is still evolving.

The replies to the questionnaire indicate that producers are given responsibilities in all but one of the countries, those in the European Union (EU) applying the relevant Community legislation.

4. INTERNATIONAL STANDARDS

In a context of growth in regional and global trade, it is imperative that the same concepts and tools are shared by all, for the sake of rationalisation and a better understanding between countries and between operators. Standardisation is an indispensable tool allowing the most cost-effective adoption of harmonised procedures. It is a guarantee that the certification of exported products is based on written methods, thereby reassuring clients.

4.1. The risk analysis revolution

The emergence of risk-based approaches has been greatly influenced by the World Trade Organization (WTO) Agreement on the Application of Sanitary and Phytosanitary Measures (SPS Agreement) (15), which came into force in 1995.

The SPS Agreement recognises the sovereign right of WTO members to ensure the level of sanitary protection they consider appropriate, while guaranteeing that sanitary and phytosanitary measures do not constitute unjustified restrictions to international trade.
To this end, the measures adopted by WTO member countries must be based either on the standards of the relevant international organisations (OIE\(^3\), CAC\(^4\) and IPPC\(^5\)) or on a scientific assessment of the risks. They must be proportional to the level of protection that is sought. The notion of equivalence emphasises that different measures may be required in order for two countries to achieve the same level of sanitary protection.

Risk analysis has thus become a reference concept at the international level. The principles of risk analysis applicable to international trade are detailed in the Codex Manual of Procedures and the OIE Terrestrial Animal Health Code (14).

It should, however, be noted that very few of the standards of the Codex or the OIE are themselves based on a formal and detailed risk assessment, due to the length of the documented procedure and the frequent lack of data (notably for the quantitative evaluation of microbiological risks). Fortunately, however, previously adopted standards have proved their worth.

Risk analysis, which is gradually permeating and providing a framework for traditional methods of evaluation and management, is too complex, however, to be the only way of dealing with sanitary issues at an operational level.

4.2. Codex Alimentarius Commission (CAC)

In developing its standards and guidelines, the CAC attaches growing importance to risk modelling throughout the food chain so as to implement a ‘production to consumption’ approach to food safety. It considers food safety risk management as an ongoing, dynamic process that takes into account changing practices and advances in knowledge (6).

The Draft Code of Practice for Meat Hygiene (3) currently being developed embodies an integrated approach for this sector, since it combines three earlier codes into a single document, which will cover hygiene, ante- and post-mortem inspections, and judgement. The available measures must be applied at the levels where they will be most effective in reducing risks to human health. The draft text underlines the dual objective of abattoir inspection, animal health and zoonosis control on the one hand, and public health on the other hand. Inspection must be proportional to the potential risk and may be eased depending on the available farm data (for batches of poultry, for example).

In a departure from the general approach of the CAC, which does not normally mention specific structures or professional groups in its standards (6), the draft refers to the involvement of veterinarians, but as a group with a specific competency rather than as a structure, the role of the competent authority still not being clearly defined in the existing draft. The roles specifically assigned to veterinarians concern surveillance of slaughter, inspection of animals and primary processing.

4.3. OIE

The OIE’s work programme for the period 2001-2005 (9) recommends that the “the OIE should be more active in the area of public health and consumer protection” and states that this participation should involve “zoonoses and diseases transmissible from animals to humans through food, whether or not animals are affected by such diseases”. The OIE had traditionally limited its role to preventing the transmission of animal diseases to other animals or to humans. It had not yet got down to formulating food safety recommendations to prevent the occurrence of these diseases, especially those where the pathogen in question does not induce clinical signs in animals.

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\(^3\) World Organisation for Animal Health
\(^4\) Codex Alimentarius Commission
\(^5\) International Plant Protection Convention
A permanent Working Group on Animal Production Food Safety, including experts from the CAC and Codex Committees, was therefore set up, in November 2002. Its work programme emphasises the need to verify that the work conducted by the OIE and the texts produced address public health concerns. It underlines the need for consistency between the texts produced by the OIE and those of the CAC concerning the roles and functions assigned to the Veterinary Services (8). The Group has proposed the elaboration of a joint OIE/Codex text on the “dual role and overall functionality of Veterinary Services in meat hygiene […] throughout the food chain”, including animal health and welfare functions that can be fulfilled by veterinarians responsible for food safety controls (8).

Regarding the organisation of Veterinary Services, the OIE Terrestrial Animal Health Code (14, 18) has long defined the terms ‘Veterinary Services’, ‘Veterinary Administration’ and ‘Veterinary Authorities’ and contains detailed provisions on the quality and evaluation of these structures, their missions and responsibilities. Indeed, the reliability of the animal health information supplied by a Country and the credence given to official sanitary certificates is fundamentally dependent upon the organisation and quality of the Veterinary Services that issued them.

The quality of the Veterinary Services is based on fundamental principles of an ethical (professional judgement, independence, impartiality, integrity, objectivity), organisational (appropriate general organisation, quality policy) and technical nature (appropriate procedures and standards, communication, etc.). There must be sufficient human and material resources in both qualitative and quantitative terms. The requirements and recommendations are formulated in the form of precise and detailed objectives.

Recommendations on the evaluation of Veterinary Services are based on a detailed methodology that nevertheless places the accent on the quality of results and on performance. The evaluation may be incorporated into a risk analysis process (within the context of trade) or serve to assist a national authority in deciding what resources to allocate to its own Services (self-evaluation).

The Code does not currently include formal provisions relating to sanitary controls ‘from the stable to the table’.

4.4. Coordination of the work of the OIE and the CAC

In line with an integrated approach, the CAC and the OIE have agreed on strategies and procedures that will enable them to coordinate and integrate their activities at all stages of the food chain. Under the terms of an informal agreement concluded in 2002:

- the OIE is competent at the production and primary processing level (abattoir, dairy), for measures relating to animal health and food safety, namely for any events that can have an impact on the subsequent safety of food products;
- the Codex Alimentarius elaborates standards relating to the production conditions and quality of products during and more especially after the primary processing stage.

4.5. European Union

Since May 2004, the EU has accounted for 25 of the 50 countries of the OIE Regional Commission for Europe.

In 1993, Directive 93/43, called the ‘new approach’, laid down the principle that the primary responsibility for the sanitary quality of products placed on the market lies with the industry operators and required them to set up HACCP-type systems to control food safety risks. It broke with the previous prescriptive provisions, moving from resource based requirements to a system based on results.

Since 2002, Regulation (EC) No. 178/2002 on food safety (5) has imposed an integrated approach, from pre-slaughter stages of production (including animal feeding and welfare) to the final consumer. It lays down rules to ensure that EU food legislation is based on risk analysis, founded on a scientific evaluation of the risks conducted in an independent, objective and transparent manner – and in some particular cases on the precautionary principle.

The Community’s battery of legislation contains few if any specific provisions regarding the organisation or working methods of the Veterinary Services. The technical provisions specific to each sector list the objectives and results to be achieved. The inspections carried out by the Food and Veterinary Office of the European
Commission are aimed at ensuring that the resources and organisation of the Services are appropriate for the tasks they have been assigned, both in Member States and in third countries that export to the EU.

The revision of food hygiene provisions carried out in 2004 ('food hygiene package') marks a change in this trend, however. The regulation known as ‘H3’, dealing with official controls on products of animal origin, includes obligations in terms not of organisation but of tasks to be carried out by official veterinarians, sanctions, staff qualifications, etc. (1).

4.6. World Bank

Following the agreement signed with the OIE in 2001, the World Bank considers the technical, scientific and operational capabilities of the control system for animal diseases and zoonoses as an international public good, which must be placed under the responsibility of the official Veterinary Services (13).

This means that, given the potential international impact of sanitary problems and the cost of managing sanitary crises, the missions of the Veterinary Services are recognised as being in the interests of the international community at large, extending beyond the interests of individual countries.

On this basis, strengthening of Veterinary Services may be eligible for World Bank funding under preferential conditions, within the spirit of the Doha Declaration (2001) made by the World Bank and its international partners (FAO, OIE, WTO, WHO) (13).

The replies to the questionnaire indicate expectations that the OIE should support its Member Countries in the area of public service organisation so as to guarantee better control of the safety of animal foodstuffs, notably by specifying the relevant provisions of the Terrestrial Animal Health Code, developing common approaches with the WHO, FAO and CAC, and raising the awareness of political decision-makers to the need for an integrated, effective approach to health issues.

5. THE PLACE OF THE VETERINARY SERVICES

The new food safety approaches ‘from the stable to the table’ may require changes in sanitary control systems.

Historically, the Veterinary Services were set up to control animal diseases at the farm level. Their field of intervention was then quite logically extended to include the abattoir, with a dual responsibility: on the one hand to supplement their information on animal health (lesions), and on the other hand to evaluate the wholesomeness of meat for the consumer.

Following on from livestock production and the abattoir, the Veterinary Services have often been assigned the task of sanitary control of animal products at different stages of processing, and even distribution. In some countries, they perform the majority of controls right up to the final consumer. In other countries, responsibilities have been shared with one or more other services, this being particularly the case in later stages of the food chain, notably distribution. These other services were competent for the end product, and for controlling general hygiene conditions in establishments.

With food safety increasingly integrating interactions between the different stages in the chain, the logical trend would be for a single structure to be made responsible for the official controls throughout the production chain, at the very least from the farm up to the final processing of the products. As an absolute minimum, there must be organised and effective coordination between the different public structures.

The Veterinary Services are present, and have a legitimate role, at the farm level, either directly or through the intermediary of specially accredited veterinary practitioners. In addition to carrying out animal health and protection missions, they control the measures needed to ensure the subsequent safety of food products derived from animals.

It will be noted that the HACCP type of approach, with organised stages of risk assessment and risk management, corresponds to the same approach as that used in diagnosis and case management, in which veterinarians are trained. Modern management of food safety is moving closer to the management of animal health.

Furthermore, when the organisation of public services relies on a single structure to ensure the control function ‘from the stable to the table’, the Veterinary Services, however they are organised, are the legitimate solution. Conversely, their competencies grant them a strategic role in the optimal coordination of the control services.
The replies to the questionnaire highlight the diversity of administrative organisations, which are often related to a country’s culture and history.

The Veterinary Services have a predominant role to play during the earlier stages of the production chain, namely in animal production and at the abattoir. They are effective in managing animal health crises, and where necessary are able to mobilise personnel from other services. They also have virtually exclusive responsibility in international trade, both for exports, for the sanitary certification of live animals and animal products (100% of countries), or for imports (all countries except one).

In general, all countries endeavour to ensure a continuum in the chain of controls, if only by setting up coordinating structures between the relevant services. The Veterinary Services play a leading role and are generally assigned duties, either alone or in partnership, throughout the system. The overall effectiveness is variable and depends on many different parameters, but a comparison between the estimated global performance of control systems and the different organisational systems tends to confirm that the leading role played by the Veterinary Services, whatever their type of structure, is a highly conducive factor.

The Veterinary Services are frequently involved (often with shared responsibilities) at the level of animal feed (over 73%) and veterinary medicinal products (100% for control of their use), thus confirming their key position and providing them with an overview of the animal production sectors. Moreover, the Veterinary Services of a significant proportion of countries have responsibilities for environmental issues relating to farms and agrifood firms (32%) and the control of genetically modified organisms (48%).

A very high proportion (86%) of the countries that replied to the questionnaire underwent a reform of their control services between 1997 and 2004, which clearly confirms the need felt by the decision-makers to adapt the organisation to changing contexts. A very large majority of these reforms (87% of the cases described) involved the consolidation of competencies for all or part of the production chain. Two of the countries concerned have placed the Veterinary Services under the direct authority of the Prime Minister. The remaining 13% already had an organisation making the Veterinary Services the leading competent authority ‘from the stable to the table’.

The weakest points in the control systems concern the human and especially the logistical and financial resources allocated to the Veterinary Services.

6. DISCUSSION AND CONCLUSION

Major changes have taken place in the global context of agrifood production and are still occurring today.

Even if the level of adoption differs according to the country and the sector, the underlying trend is for an evolution in the conception of food safety towards an integrated approach over the whole of the production chain, ‘from the stable to the table’. This is seen as allowing problems to be more effectively controlled, at an optimal cost.

This evolution is notably due to the systems having reached maturity, and to the increasing need for standardisation, within an international framework, for mutual understanding and trust. Widely publicised food safety crises have amplified the phenomenon.

Measures will be applied at the most relevant level in terms of effectiveness, but also in terms of feasibility, reliability and cost.

This involves the use of techniques such as identification of animals and traceability of products through the production chain.

It also involves a sharing of responsibilities between industry operators, who are primarily responsible for the quality of the products they place on the market, and the public services, which thus provide a second level of controls.

There is renewed interest in the role of consumers, the final links in the production chain, both as individuals, and as a political force through consumer associations or the media.
The administration nevertheless remains the ultimate guarantor of food quality, notably in international trade, by signing the certificates. It is likewise the ultimate guarantor for the consumer.

It should be emphasised that the control of information and the ability to intervene rapidly at all levels of the food chain would be particularly useful in the event of a bioterrorist attack, for early detection and tracing of the phenomenon.

In this respect, it is essential for the administration to define the precise role of each stakeholder and have a control over information on the entire production chain. The administration must also remain present at points such as the abattoir, which is more than ever a strategic convergence site.

Modern approaches to food safety have increased the need for a risk management continuum, with a ‘global HACCP’ type of system, throughout a given production chain. This condition is more likely to be met when a single administration is responsible for the controls.

The Veterinary Services are present both at earlier stages in the production chain and at the slaughter stage. The training that veterinarians receive gives them the necessary skills to grasp sanitary issues in an integrated manner throughout the entire production chain. An integrated organisation is one that makes best use of these services.

The way that food control services are organised is, however, heavily influenced by the administration's territorial organisation (central government, decentralised, regionalised), by the importance of agrifood production in the economy of the country, and even by the crises that have occurred. The wealth of the country is also a key factor.

While there is no single solution in terms of organisation, in every case it is important to ensure a management continuum, at very least by means of organised and effective coordination. Potential areas of tension must be kept to a minimum.

The aim is to improve the effectiveness, or rather the efficiency, of the controls and actions of the public services. In a context of limited resources, those that are available must be used in an optimal manner. The recent reforms that have taken place in different countries show a move towards rationalisation of the administrative organisation, giving the Veterinary Services responsibility for controls ‘from the stable to the table’.

The introduction of risk analysis principles in the WTO SPS Agreement in 1995 marked a change of direction for risk managers.

These principles have been introduced and enlarged upon in the standards of the CAC and the OIE, as well as, gradually, at the level of countries or regional organisations (e.g. EU). They have undoubtedly contributed to the global consideration of food safety issues and possible solutions.

It is nevertheless important to distinguish between risk analysis that stems directly from the provisions of the SPS Agreement and risk analysis as a far more general concept. Under the SPS Agreement, risk assessment is carried out by a country, usually an importing country, to provide scientific justification when it adopts import measures that are more stringent than those contained in the relevant international standards.

A full risk analysis, within the meaning of the SPS Agreement, is a long and costly process. It is not necessarily based on validated scientific grounds and may remain relatively theoretical, given the working hypotheses that are needed in order to make up for a lack of data. Moreover, the results of a quantitative risk assessment can vary considerably depending on the choice of mathematical model. An assessment of this type, carried by a country on its own situation and not open to debate, obviously has a fundamentally different value from that of international standards, which are elaborated by groups of experts, discussed in open debate and voted by the Member Countries of either the OIE or the CAC. Clearly identifying these limits will allow risk analysis to be used with greater discretion.

Beyond the specific ‘SPS’ context, risk analysis corresponds to a formalisation of good practices that have long been used to elaborate scientifically based national and international rules, standards and regulations. This formalisation provides a methodological framework and has in some cases led to changes in methods or even in structures (separation of the bodies responsible for risk assessment and risk management).
Risk assessment methods are adapted according to the question under study and the information available (for example, the data needed to assess the impact in terms of human pathology are often lacking), and take into account the advice of experts.

It is up to the policy makers to define the required level of protection and allocate the necessary resources. Particular attention must be given to ensuring that the recommended measures are both technically and financially feasible. An integrated approach must be aimed at achieving optimal control of risks in the most cost-effective manner, while respecting the proportionality of the measures.

REFERENCES


10. OIE (WORLD ORGANISATION FOR ANIMAL HEALTH) (2002). - Recommendation No. 1 on "the Role of Veterinary Services in the food chain from stable to table", adopted at the 20th Conference of the OIE Regional Commission for Europe, Kuusamo (Finlande), 10-13 septembre 2002 – OIE, Paris, France


ANALYSIS OF QUESTIONNAIRE RETURNS

Comments:

☑ Whereas EU Member States represent 50% of the countries of the OIE Regional Commission for Europe, they account for nearly 70% of the questionnaire returns: the fact that food security regulations have been harmonised within the EU should be taken into account in interpreting some of the replies.

☑ Some of the points covered in the questionnaire will not be exploited, due to the many missing or uninterpretable replies (organisation in charge of evaluating health risks, tasks carried out by accredited private veterinarians, etc.).

1. Contextual elements: importance of animal production

Overall, animal production is of significant economic importance in 21 of the 31 countries that responded (68%), all of which are major exporters.

Among the dominant sectors, dairy cattle were mentioned by 21 (68%) countries (12 of these also mentioning slaughter cattle), pigs and poultry by 17 (55%) countries (14 mentioning both sectors), small ruminants by 4 (13%) countries, aquatic animals by 8 (26%) countries, and bees by 1 country.

2. Services involved in food safety ‘from the stable to the table’: administrative organisation and fields of intervention

The administrative body supervising the national Veterinary Services is the ministry responsible for agriculture in 74% (23 countries) of countries that replied, the ministry of health in 13% (4 countries), the ministry of consumer affairs in 1 country and the ministry of economic affairs in 1 country. In 2 countries, the Veterinary Services report directly to the Prime Minister, following recent reorganisation.

‘From the stable to the table’, a wide variety of organisational types were reported, and the results have therefore been greatly simplified in order to highlight the main features.

The Veterinary Services are present, by definition, in the upstream part of the production chain.

They are solely responsible or mainly responsible for the whole of the control chain in 48% of cases (15 countries), and are under the supervision of the ministry of agriculture in 9 countries (60% of the 15), the ministry of health in 3, the ministry of consumer affairs in 1, and the Prime Minister in 2.

In similar proportions of countries the Veterinary Services are involved throughout the production chain, sharing responsibilities with another service in the later stages:

- Responsibilities are shared shortly after the abattoir stage in 7 countries (50%), in 2 countries with another service in the same ministry (agriculture);
- Responsibilities are shared well beyond the abattoir stage in 5 countries (36%), with the ministry of health and/or consumer affairs;
- Responsibilities are shared before the abattoir stage in only 2 countries, in one of them within the same ministry.

Post-abattoir stages are reported to be exclusively the responsibility of another service in 2 countries.

The field services are State services in 55% of countries (17 replies). They report to a regional or local authority in 3 countries (10%), and to both State and local levels in 9 countries (30%). They are integrated into an independent agency in 3 countries (10%).

3. Division of responsibilities

The responses have been compiled in the form of a table (Fig. 1) highlighting the continuums and the relative importance of the Veterinary Services compared to the other control services in the 30 countries covered. The presentation does, however, have the effect of minimising the degree of continuity when the Veterinary Services are solely responsible at earlier stages in the chain (column on the left), but later share responsibilities with other services (middle column): whereas the continuum is ensured (by the Veterinary Services), this is not reflected in the table.
<table>
<thead>
<tr>
<th>Animal Identification</th>
<th>Sole responsibility of the VS</th>
<th>Shared responsibility of the VS</th>
<th>Sole responsibility of other services</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>58% (12)</td>
<td>84% (26)</td>
<td>2</td>
</tr>
<tr>
<td>Traceability of animal movements</td>
<td>65% (20)</td>
<td>93% (29)</td>
<td>2</td>
</tr>
<tr>
<td>Traceability of food products</td>
<td>42% (13)</td>
<td>94% (25)</td>
<td>4</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Animal health</th>
<th>Sole responsibility of the VS</th>
<th>Shared responsibility of the VS</th>
<th>Sole responsibility of other services</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prophylactic treatment</td>
<td>87% (26)</td>
<td>94% (29)</td>
<td>(1)</td>
</tr>
<tr>
<td>Health policing</td>
<td>94% (29)</td>
<td>100% (31)</td>
<td>1</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Food safety of animal products</th>
<th>Sole responsibility of the VS</th>
<th>Shared responsibility of the VS</th>
<th>Sole responsibility of other services</th>
</tr>
</thead>
<tbody>
<tr>
<td>Slaughter</td>
<td>93% (28)</td>
<td>100% (30)</td>
<td>2</td>
</tr>
<tr>
<td>Production</td>
<td>67% (20)</td>
<td>87% (27)</td>
<td>3</td>
</tr>
<tr>
<td>Processing</td>
<td>63% (19)</td>
<td>87% (27)</td>
<td>3</td>
</tr>
<tr>
<td>Transport</td>
<td>63% (19)</td>
<td>87% (27)</td>
<td>3</td>
</tr>
<tr>
<td>Storage</td>
<td>43% (13)</td>
<td>77% (24)</td>
<td>3</td>
</tr>
<tr>
<td>Distribution</td>
<td>43% (13)</td>
<td>77% (24)</td>
<td>3</td>
</tr>
<tr>
<td>Catering</td>
<td>27% (8)</td>
<td>66% (20)</td>
<td>3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Animal feed</th>
<th>Sole responsibility of the VS</th>
<th>Shared responsibility of the VS</th>
<th>Sole responsibility of other services</th>
</tr>
</thead>
<tbody>
<tr>
<td>Feed production</td>
<td>77% (20)</td>
<td>73% (19)</td>
<td>2</td>
</tr>
<tr>
<td>Distribution</td>
<td>81% (21)</td>
<td>81% (21)</td>
<td>2</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Veterinary medicinal products</th>
<th>Sole responsibility of the VS</th>
<th>Shared responsibility of the VS</th>
<th>Sole responsibility of other services</th>
</tr>
</thead>
<tbody>
<tr>
<td>Production</td>
<td>73% (22)</td>
<td>87% (26)</td>
<td>(1)</td>
</tr>
<tr>
<td>Distribution</td>
<td>87% (20)</td>
<td>100% (30)</td>
<td>1</td>
</tr>
</tbody>
</table>

| Aquatic animals | 15 (51%) | 90% (26) | 11 (38%) | 3 (10%) |
| Animal welfare | 20 (65%) | 87% (27) | 7 (23%)  | 3 (10%) |

<table>
<thead>
<tr>
<th>Export certificates</th>
<th>Sole responsibility of the VS</th>
<th>Shared responsibility of the VS</th>
<th>Sole responsibility of other services</th>
</tr>
</thead>
<tbody>
<tr>
<td>Live animals</td>
<td>100% (30)</td>
<td>97% (29)</td>
<td>1</td>
</tr>
<tr>
<td>Animal products</td>
<td>100% (30)</td>
<td>97% (29)</td>
<td>1</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Import controls</th>
<th>Sole responsibility of the VS</th>
<th>Shared responsibility of the VS</th>
<th>Sole responsibility of other services</th>
</tr>
</thead>
<tbody>
<tr>
<td>Live animals</td>
<td>100% (31)</td>
<td>100% (31)</td>
<td>1</td>
</tr>
<tr>
<td>Animal products</td>
<td>97% (30)</td>
<td>97% (30)</td>
<td>1</td>
</tr>
</tbody>
</table>

| Environment | 32% (9) | 32% (9) | 68% (19) |
| GMOs        | 13% (3) | 48% (11) | 52% (12) |
| Plant protection | 4% (1) | 20% (5) | 80% (20) |
The most notable points are as follows:

- the Veterinary Services are always present at the level of health policing and controls at the abattoir;
- the Veterinary Services have total responsibility for certification and import controls of animals and animal products (except, in the case of foodstuffs, within a country);
- the control continuum is very generally ensured throughout the entire food chain by the continuous involvement of the Veterinary Services, either alone or with shared responsibility;
- the Veterinary Services are generally involved in the sanitary control of aquatic animals (90%) and animal welfare (87%);
- the Veterinary Services are very frequently involved, often with shared responsibilities, at the level of animal feed (over 73%) and veterinary medicinal products (100% for their control and use), thus confirming the key position of these services and giving them an overview of all the different sectors;
- the Veterinary Services have responsibility for environmental matters relating to farms and agrifood firms in some countries (32%);
- the Veterinary Services are often involved in the control of genetically modified organisms (48%);
- plant protection systems are usually separate.

The last three complementary responsibilities are found in countries where the Veterinary Services have been given wide-ranging responsibilities for the production chain, thus confirming the logic behind this policy.

4. **Documentary evidence of an integrated control policy**

A ‘stable to table’ approach is recommended in official documents in 23 (74%) countries, 18 of which are members of the EU. Of these 23 countries, 10 (32%) countries, including 9 in the EU, have incorporated the concept into a law.

5. **Territorial organisation: the administrative levels responsible for different tasks**

<table>
<thead>
<tr>
<th>Organisational level</th>
<th>Risk assessment (for AH and FS)</th>
<th>Drafting regulations (for AH and FS)</th>
<th>Surveillance and control (for AH and FS)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Central government only</td>
<td>17</td>
<td>Central government only</td>
<td>23</td>
</tr>
<tr>
<td>Central government and local level</td>
<td>14</td>
<td>Central government and local level</td>
<td>8</td>
</tr>
<tr>
<td>Central government and local level</td>
<td>1</td>
<td>Central government and local level</td>
<td>23</td>
</tr>
<tr>
<td>Regional level Local level Municipal level</td>
<td>Local level only</td>
<td>Local level only</td>
<td>Local level only</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>0</td>
<td>7</td>
</tr>
</tbody>
</table>

*: AH = animal health, FS = food safety

NB: One country mentioned a different territorial organisation for animal health and for food hygiene.
6. Reorganisation

A very high proportion of countries, namely 86% (26 countries), underwent a reorganisation of their control services between 1997 and 2004.

Among the 15 countries that provided details, 87% of reforms (13 countries) were aimed at bringing together competence for all or part of the production chain, in 2 cases by setting up an agency with the dual function of evaluation and control. One country has separated risk assessment from risk management, and another has set up an animal welfare agency.

Changes in approach do therefore appear to have resulted in changes, sometimes quite radical, in organisation.

7. Mobilisation of supplementary personnel in the event of a crisis

All of the countries that replied said that they could easily mobilise supplementary personnel in the event of an animal health crisis, in 27 cases (93%) calling on food safety officials (whether or not in the same service) and in 27 cases (25 in common with the previous point) calling on officials from other official services. Sixteen countries (55%) said they could mobilise veterinary students.

To cope with a food safety crisis, 24 countries (83%) stated that they could call on officials from other public services. Thirteen (45%) said they could mobilise veterinary students. Four countries (14%), however, would not mobilise any other personnel.

Overall, the possibilities exceed 20% for an animal health crisis.

Seventeen examples of crises were given, by 14 countries: 15 examples (88%) involved epizootics (foot and mouth disease, classical swine fever, avian influenza, Newcastle disease) and the remaining 2 concerned dioxin.

These figures, along with the additional comments provided, tend to show that the services are more concerned with epizootic diseases than with food crises, and are better prepared for them.

8. Partners

Private sector veterinarians participate in public health activities, in one form or another, in 83% of countries (25 out of 30). Their participation is essentially in the earlier stages of the production chains, at the farm and primary processing level: disease prevention (70%, 21 countries), abattoirs (57%, 17 countries), zoonoses (50%, 15 countries), aquatic animals (47%, 14 countries), health policing and animal welfare (37%, 11 countries). Food safety outside the abattoir was nevertheless mentioned by 10 countries (33%) and bee health by 3 countries (10%).

a) Producers:

Ninety percent of countries (27 out of 30) mentioned statutory responsibilities of producers in controlling animal health, albeit at a minimal level through an obligation to carry out disease prevention and report contagious diseases.

Producers are, however, organised to control animal diseases in only 57% of the countries (17), in the form of animal health-based associations (6 countries), various types of association (2 countries), as well as through the actions of industry operators downstream (2 countries).

Formal partnerships with the administration exist in 50% of countries (15 countries), notably through the approval of sanitary programmes (3 countries), participation in ad hoc commissions (3 countries), and even financial support (1 country).

b) Agrifood professionals:

Thirty countries out of 31 mentioned responsibilities of agrifood professionals but, apart from EU Member States, which referred to the Community framework, they did not specify what form these take.

Producers are reported to be organised to promote the quality of their products in 23 countries (74%), mostly in the form of producers’ associations or equivalent.

9. General qualitative assessment

Countries were asked to provide a qualitative assessment of a series of items relating to the organisation of food safety, on a scale of -2 to +2. A synthesis of the results reveals an assessment that is qualified but globally satisfactory, since the overall score is positive for each country.
Figure 2 shows the distribution of cumulated points by country, from +1 to +37 cumulated points, on a scale of -38 to +38.

Among the most unsatisfactory points, the most frequent were human resources and logistical and financial resources (10 countries, 32%). These were followed by organisation of livestock producers (8 countries, 25%), involvement of private sector veterinarians (6 countries, 19%) and circulation of information (4 countries, 13%).

Figure 3 shows the total number of points awarded by all the respondents for each item.

The results highlight the following:

- a level of responsiveness considered good or very good in the event of an animal health crisis, an area that appears to be well managed by the Veterinary Services, who have an undisputed leading role in such situations (total of 46 points, the item with the highest score, all countries giving it a positive assessment);

- a reasonable level of responsiveness, albeit less positively asserted, in the event of a food security crisis (38 points), those countries in which responsibilities are the most widely dispersed expressing reservations on this point;

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1 Each country scored a given item from -2 to +2. If no score was given, the item was scored 0. Thirty countries have been taken into account, giving a possible combined score of -60 to +60 points.
- an effectiveness in routine activities considered to be satisfactory (38 points);
- the lack of problems regarding the independence of the health services (41 points); acceptable results for the general organisation of the services concerned (35 points) and the transparency of the tasks of the health services (37 points);
- coherence of the decision-making chain (32 points), coordination between the persons in charge (26 points) and circulation of information (29 points) seem to be weak points in countries with a complex organisation; these items put into perspective the responses given to a specific question, namely that coordination is considered globally satisfactory by 29 countries (97%) (satisfactory by 25 countries, highly satisfactory by 4 countries);
- the qualifications of Veterinary Service officials were considered satisfactory (33 points for official veterinarians, 32 for other Veterinary Service officials);
- traceability throughout the chain (32 points) is gradually being introduced;
- a weakness at the level of the organisation of industry operators, relating to the accountability of manufacturers (22 points), the involvement of private veterinarians (14 points), and especially livestock producers (3 points for their organisation, 13 for their qualifications).
- lastly, there were often weaknesses in human resources (16 points), and in logistical and financial resources (8 points).

These results are clearly only an average and each item was considered satisfactory, or even highly satisfactory, by many countries.

10. Role of the OIE

Twenty-eight countries (90%) considered that the OIE could support its Member Countries in the area of public service organisation to guarantee better control of the safety of animal foodstuffs (1 ‘No’ and 2 non-answers).

Twenty of these 28 countries (71%) were in favour of all the forms of intervention proposed: study seminars and exchanges of practice at the regional and international level, raising the awareness of political decision-makers to the need for an integrated approach to health issues, specifying the relevant provisions of the Code, common approaches with the WHO, the FAO and the Codex Alimentarius Commission.

There were reservations concerning seminars at the international level (1 ‘No’ and 5 non-responses), raising awareness of political decision-makers (2 ‘No’) and specifying the relevant provisions of the Code (1 ‘No’).