

# Eastern Europe and the former Union of Soviet Socialist Republics: animal health systems in transition

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## Summary

The economic transition in Eastern Europe and the former Union of Soviet Socialist Republics (USSR) during the last decade has profoundly changed the agricultural sector and the well-being of people in rural areas. Farm ownership changed; selected farm assets, including livestock, were transferred to farm workers or others, and the social and service structures of rural society are in a state of uncertainty. The transition has, in general, led to the deterioration of rural services. Animal health services have also deteriorated. This decline is associated with the contraction of the livestock inventory, the fragmentation of farms, higher transaction costs for service providers, and the overall decline of the rural economy which has, so far, lowered the demand for animal health services.

There are considerable differences in the way that these countries are coping with the economic transition and its aftermath. Among the determining factors in the former USSR are, as follows:

- the speed of recovery from the legacies of large State-controlled farming and a centrally planned animal health system
- the efforts made to address poverty reduction
- the choice on whether to become a Member of the World Trade Organization and the requirements of such membership
- the ability to provide low-cost services to a fragmented and unskilled livestock production sector.

In Eastern Europe, the requirements for joining the European Union (EU) are an additional and important determining factor.

In the short term, the choice of a veterinary system to serve the livestock sector may differ from country to country, depending on the legacies of the past, the status of reforms and the proximity of Western markets. Lower-income countries with an oversupply of veterinarians may support labour-intensive, low-cost systems which focus on food security and public health. The better-endowed EU accession countries may focus rather on improved disease surveillance, production enhancement, quality assurance and increased food safety. Such choices may also determine the investment made by these countries in upgrading their State system, laboratories and veterinary education facilities.

## Keywords

Disease control policy – Eastern Europe – Food hygiene – Former Union of Soviet Socialist Republics – Transition – Veterinary education.

## Introduction

The demise of the centrally planned economies of Eastern Europe and the former Union of Soviet Socialist Republics (USSR) during the last decade of the 20th Century had profound effects on the organisation of agricultural production. The dominant system of state and collective farms disappeared in most of these countries and was replaced by a mixture of corporate farms, family farms and backyard farming. Rural poverty increased and many families became dependent on their backyard production for survival (23, 31). The transition was also traumatic for the livestock sector. Demand declined, direct state support halted, transport and marketing costs increased. Many countries implemented an ill-designed distribution of animals to the population that often led to premature slaughter or death. Consequently, the animal inventory contracted, in some countries to less than half their inventory in 1990. Animal ownership shifted from collective (and mega-) state farms to smallholders (5, 7, 22, 23, 31). In Russia, for example, about 40% of livestock are now managed by smallholders, producing close to 50% of all milk and 60% of all meat (16). Many of the new owners had to learn by trial and error as research and extension services, even if they existed, had no experience of (or even interest in) serving the needs of smallholders. In some areas (the Balkans, the Caucasus and parts of Central Asia), this transition was further complicated by civil strife which aggravated animal losses and changed husbandry methods, e.g. flocks could no longer be grazed on summer mountain pastures. The contraction of the inventory, as well as the changes in ownership, had a severe impact on service providers to the livestock industry, especially on Veterinary Services and feed manufacturers. Livestock prices were low during the early transition and there was little interest in animal health or feed concentrate.

The contraction appears to have stabilised or 'bottomed out' in recent years. Prices have increased (especially meat prices) and farmers have become more familiar with management issues. They are also more interested in better feeding and disease control. This paper reviews these changes in the animal health sector, based on the experience of the World Bank in the region during the last decade. Such experience included sector studies and investment projects in livestock, agricultural services and rural credit. However, the opinions expressed in this paper are solely those of the author and do not necessarily represent the views and policies of the World Bank or its affiliates.

## The legacy of centrally planned economies

There are considerable differences in the history and structure of the livestock sector and veterinary profession in the different countries in Eastern Europe and the USSR (1, 2, 4, 11, 12, 14,

21). Many Eastern European countries had a reasonable infrastructure and had, or have, some experience in private resource management. Many livestock specialists participated in pan-European discussions and exchanges, such as those initiated by the European Association for Animal Production in collaboration with the Food and Agriculture Organization of the United Nations (9, 13), and so are familiar with different approaches to the technical and policy aspects of animal agriculture. However, many countries in the former Soviet Union (FSU) had poorly functioning farmer support systems and limited, if any, experience with private-sector farming, market-driven production or private provision of farm services. Only a privileged few had been exposed to experiences beyond the Soviet borders.

Despite these regional differences, there are certain similarities which are characteristic of the animal health policies of the former centrally planned economies. In brief, these characteristics include the following:

- a centralised system with few, if any, private service providers, with state-planned campaigns and state-planned drug procurement
- a profession that was largely preoccupied with food animals (and agriculture)
- a focus on epizootic disease control, with less attention on production diseases
- labour-intensive and largely outdated diagnostic services with poor quality control
- limited skills and tools in epidemiology
- a tendency to focus more on policing than on services
- isolation from modern technical and organisational developments in animal health, especially in the former USSR
- an aging (veterinary) education system, more based on theory than on practice, and focusing mainly on farm animals
- a farming community which is literate and often fairly well educated.

Since independence, some of these countries have moved towards more liberalised services, upgraded extension, and improved the quality of production and services. Still, some of the 'central plan' thinking is likely to persist for a generation. An understanding of this legacy is paramount to comprehend the challenges of the current transition.

## Transition

### Decline during the early transition

In some countries (the Baltics, the Caucasus, Albania, the Kyrgyz Republic), collective and state farms were abruptly

dismantled, and their veterinary employees were often left on their own, at best with some equipment or drugs obtained during the break-up of the farms. In other countries, services lingered on. In the Balkans, the semi-autonomous veterinary stations continued their work and tried to overcome declining state support by charging substantial fees to farmers, but had to cope with civil strife and repatriation issues (after 1999). Many veterinarians in the former USSR were still formally employed by farms or county (regional or community) offices, but were often not paid, and increasingly survived on their backyard farms with some additional income (often paid in kind, i.e. in goods or services, not in cash) from providing limited private services.

Most of the organised veterinary disease control programmes ceased or were only partly implemented. The quality of State inspection services declined, due to lack of funds for travel or even salaries. In some FSU countries, State-appointed inspectors were often not paid, were paid in kind, or were tacitly allowed to acquire some income from demanding bribes. Fortunately, no major epizootic disease outbreaks spread over the region (36); probably as a result of the declining animal numbers and reduced animal movements. In the late 1990s, some outbreaks of foot and mouth disease (FMD) occurred, mainly in Central Asia, but the countries involved were not participating in the international meat trade and the economic effects were minimal. Dispersal of animals from farms to domestic premises led to closer contact between the human and animal populations and the re-emergence of a number of zoonoses. Typical examples were the increase in Q fever in the Balkans, brucellosis in Central Asia, the Caucasus and Balkans, and echinococcosis/hydatidosis and rabies in Central Asia and the Caucasus (14, 27, 28, 32). Furthermore, the lack of familiarity of the public with disease risks and uncontrolled (home) slaughter led to small outbreaks of human anthrax, occasional outbreaks of trichinellosis, and other cases of food poisoning.

Drug supplies became very irregular as budgets declined and traditional trade arrangements within the region deteriorated. Many of the Soviet state supply companies (*Zoovetsnab*) became partly privatised but poor management and declining sales led to the demise of these new entities. Foreign drugs, in particular, became difficult to obtain in those countries where state procurement had declined but where private drug and equipment supply systems had not yet been developed (1) or were hindered by state employees enforcing outdated regulations. Gradually, a number of private companies emerged but the lack of cash complicated the issue of supply. There was also a resurgence in the use of ethno-veterinary methods – an art which still existed in the region. Some support was provided by international donors and lenders (mainly in the form of animal drugs and technical assistance). However, this assistance was often ineffectively used, in part because of the inability of the farmers to pay, and in part because it was managed by state agencies which directed these supplies mainly to moribund state farms.

## Stabilisation

The situation on the farms as well as in the veterinary profession stabilised in the mid-1990s (2, 4, 5, 23). Most countries developed new veterinary laws that, among other things, began to recognise private animal health services (2, 4, 11, 22). With this endorsement, an increasing number of veterinarians started providing private services. In the former Yugoslavian republics, veterinarians largely consolidated their services in the veterinary stations, which were now private. In Central Europe and the Baltic, veterinary departments benefited from the move towards EU accession and EU-funded programmes, which improved skills in the state veterinary departments and also provided training to private veterinarians and extension services.

In the former USSR, some individual private veterinarians or groups emerged (including those mainly involved in drug sales) but many veterinarians were still employed by farms, local authorities and/or regional governments, even if only part time. However, even private veterinarians were often expected to practise in exact accordance with the plan and orders of the State, which prescribed such details as when to vaccinate, conduct faecal analyses, etc. (4, 17, 29). In reality, such plans were rarely fully implemented. Awareness among practitioners about veterinary systems outside the FSU was limited. Distance, the lack of understanding of a market economy, and limited language skills reduced access to foreign literature, concepts and experiences. In the urban areas, the abolishing of restrictions on veterinary practice allowed the profession to diversify, with more (private) veterinarians moving into areas other than food animal practice. In Russia, for example, the number of companion animal veterinarians increased from almost none during the Soviet period to 5,000 (about 7% of Russian veterinarians, although many practised part time) in 1995 (2). Food hygiene continued to be weak, due to the lack of state budgets and to the shift from a central Soviet-controlled system to food inspection and border controls in each of the new countries.

## Current and future challenges

As mentioned, the pace of change differs greatly throughout the region. European Union accession countries demonstrate broader reforms and greater adaptation to the new market conditions than the previous Soviet States, where reformed veterinary services are scattered far apart. Although it is difficult to generalise, there are a number of major challenges involved in the reform of veterinary services and the creation of animal health and food safety services which are responsive to client needs. These challenges include the following:

- the re-organisation of animal health services
- the development and implementation of realistic disease control policies
- the organisation of food hygiene and public health.

Different approaches are taken to address these mainly structural issues in the region, depending somewhat on the wealth of the particular country, on its closeness to the EU market, on its macro-economic stability, on government commitment, and on support from external aid. Such aid may be more forthcoming than previously, when international lenders were reluctant to invest in a declining sector.

## Organisation of veterinary services

### Privatisation

The major policy decision, i.e. allowing the development of private veterinary services, has been taken by most countries and confirmed by law. Full implementation is variable. Issues not yet fully resolved include the following:

- clarification of the roles of the public and private sector
- skills improvement
- licensing (and its costs)
- the related issue of creating effective veterinary organisations (which, in many countries, are still dominated by the State and academia, rather than by practitioners).

In addition, the financing of veterinary equipment and supplies to the new service providers is still an issue. Even where credit is available, the lack of familiarity of the veterinary community with business planning and borrowing limits their use of it.

The initial enthusiasm of veterinarians to begin in private practice has been dampened by the following:

- the investment needed
- State restrictions on starting private practices
- the fact that official registration brings with it the payment of taxes
- the annual fees levied by veterinary chambers or the government in some countries, for example over €300 in Slovenia, compared to €7 in Romania (12).

In some countries, especially in the Balkans, the efforts of veterinary chambers to fix prices at fairly high levels have discouraged the use of veterinary health services by farmers. To avoid these obstacles to practice, veterinarians seek other jobs or practise without a licence. In the Kyrgyz Republic, for example, the number of licensed private veterinarians declined from 1,277 in 1998 to 492 in 2000. In Moldova, an estimated half of the total number of veterinarians – out of a total of about 2,000 – changed to other economic activities or left the country (15, 17, 30).

Most veterinary departments are still attempting to determine the respective roles of the public and private sector and to establish a transparent system in which the State contracts private veterinarians to implement certain public services. As

can be seen from other articles in this issue of the *Review*, this is not just a problem for these countries (see Leonard D.K. – Tools from the new institutional economics for reforming the delivery of Veterinary Services). In some cases, a slower pace of privatisation, with an initial phase of full cost recovery from farmers for public services, may be required to reduce the possibility that local monopolists may seize essential services. On the other hand, a slower process should not discourage private entrepreneurial activities.

### The short-term outlook for low-cost veterinary practices

The current net annual income levels of veterinarians in the region range between €2,000 and €6,000 in Eastern Europe (11) and €800 and €3,000 in the former USSR. Taking into consideration the number of veterinary staff available, these costs of veterinary labour seem fairly well balanced with the demand.

As estimated in Table I, the present veterinary capacity is approximately equivalent to a rate of 1,000 veterinary livestock units (VLU) to one farm animal veterinarian (FAV). This is based on the assumption that the value of the gross output per animal is approximately US\$500, and that 2% of the production budget would be devoted to animal health or €10 per VLU. One VLU in the region would produce a turnover of €10,000. Extrapolating other data (3, 33), about one-quarter to one-third of this sum would be salary; the rest would be operational costs and supplies. This seems realistic for the current situation in most of the FSU. It may also represent some areas in Eastern Europe, but the animal health market there is slightly better and incomes are expected to increase further with accession to the EU. The EU animal health and food safety requirements are likely to increase veterinary costs to the farmer. These costs may be offset by EU subsidies, which are expected to raise farm incomes, and thus, indirectly, veterinary revenue. These estimates relate to rural food animal practice and assume limited involvement of the veterinarians in companion animal practice.

### System of rural services

The second policy issue is the choice of veterinary system. In very generalised terms, this involves a choice between a low-cost, labour-intensive animal health service (the Mediterranean model, with approximately 1,000 VLU per practitioner) or a high-cost, low-labour, technology-intensive system (the northern European/United States of America [USA] model, with over 3,000 VLU per practitioner) (25). The current tendency, especially for the FSU, is to choose a low-cost system in the short term, to ensure services for rural smallholders and (in view of a perceived oversupply of veterinarians) employment for the rural veterinarian, but to strive towards adopting the northern European model in the longer term.

The short-term policy is in accord with the current supply of veterinarians. The number of VLU per FAV was always

**Table I**  
**Regional demographics of and need for food animal veterinarians in transition countries, compared to selected countries with long experience with private Veterinary Services**

Region	Total FAV <sup>a)</sup>	Calculated need assuming 3,000 FAV/VLU	Estimated surplus	Calculate need assuming 1,000 FAV/VLU	Estimated surplus
Eastern Europe	18,043	4,150	335%	12,470	45%
Greater Balkans	14,893	4,410	238%	13,240	12%
Baltics	4,194	670	526%	2,020	82%
Russia, Belarus and the Ukraine	75,018	17,970	317%	53,900	39%
Caucasus	4,360	1,510	189%	4,520	- 4%
Central Asia	17,955	6,220	189%	18,570	- 4%
United States of America	26,725	43,050	- 38%	129,160	- 79%
South Africa	3,100	4,600	- 32%	13,700	- 77%
Netherlands	2,200	2,350	- 6%	7,040	- 67%

a) Data calculated from Table II (based on data from the OIE [World organisation for animal health], 2003)

FAV: farm animal veterinarian

VLU: veterinary livestock units

reasonably low in Eastern Europe and especially in the USSR, where the 'norm' was 800 VLU per FAV (but this target was rarely achieved). Over all, the current number of veterinarians is comparable to the absolute numbers in Europe and North America (Table II). The main difference is that over 50% of the practising veterinarians there are employed in companion animal practice. In the former USSR and in most of Eastern Europe, the concept of the companion animal veterinarian has only recently been accepted; their market share is less than 10%. Supporting services, such as laboratory services, may need to be consolidated. Kazakhstan, for example, has 196 veterinary laboratories and the small country of Lithuania has eleven, compared to two in the Netherlands. Still, an elaborate laboratory service network may, in the short term, be a pragmatic approach in view of the low labour costs and poor transport and communication facilities in the region. The major requirement for success with this approach is an improvement in performance, especially in the quality of service and quality assurance, and an expansion of the range of services for farmers (including better tests for production diseases and tests for feed analysis, water quality, etc.), rather than continuing to test for state-ordered programmes only.

### Farm services

A more practical issue in the organisation of animal health services is to balance both the type and costs of veterinary interventions with farm systems and farm income (see 'The short-term outlook for low-cost veterinary practices', above). With the increase in small farms and the lack of experience of livestock farmers, the transaction costs of veterinary services have increased, especially in those countries where farms are dispersed (the Baltics, some parts of the Balkans and Central Asia), rather than concentrated in villages (typical for most of the FSU and Central Europe). These farms face higher transaction costs in marketing and obtaining services. The challenge for the profession is to keep costs low, especially the

cost of transport, which is generally the major cost factor in food animal practice in developing countries (3, 25). This is currently achieved in the FSU and Romania, for example, by using motorbikes or horses. However, in Central Asia and eastern Russia, the distances between farms and/or villages are considerable (Table II) and other means of reducing transaction costs should be, and are being, explored. These include the use of auxiliaries (Albania), drug supply through farmer co-operatives (Kyrgyz Republic), joint vaccination-dipping-deworming campaigns or such campaigns in combination with artificial insemination services, extension services, and animal movement control (3, 4, 17). The present fairly high density of veterinarians and technicians (Table I) and their low costs seem to lessen the need for using community animal health workers, except for extension purposes, specific skills (such as artificial insemination in cattle and sheep) and, possibly, animal health services for transhumant herds and flocks. Seasonal transhumance of livestock is common in the mountainous areas in the region (the Balkans, Carpathians, Caucasus or Tien Shan), as well as in the desert areas of Central Asia. Traditionally, and in the present day, veterinarians join these annual migrations.

### State services

As mentioned earlier, in many countries the State is still involved in the provision of animal health services. In particular, rural communities and counties feel obliged to fill the vacuum left by abandoned collectives, especially where the private sector is hesitating to do so, for the reasons stated above. Under such conditions, and especially in remote areas, there may be a role for a combination or 'mix' of state and private services. Examples of such mixed services can also be found in Western countries where animal health services are otherwise fully privatised, such as in the Scottish highlands, rural Scandinavia or on Native American reservations in the USA.



**Table II**  
**Number of food animal veterinary personnel in relation to animal inventory and territory to be covered in transition and selected countries**

Regions and countries	Total number of vets <sup>(a)</sup>	Total number of technicians <sup>(a)</sup>	Total number of FAV *	Livestock inventory in VLU x 1,000 <sup>(b)</sup>	Calculated VLU/FAV	Agricultural land (1,000 km <sup>2</sup> ) <sup>(c)</sup>	Veterinary density (km <sup>2</sup> per VLU)
<b>Central Asia</b>	20,308	12,208	17,955	18,659	1,039	2,854.2	159.0
Kazakhstan	7,832	5,923	7,059	7,029	996	2,106.0	298.4
Kyrgyz Republic	1,844	1,086	1,890	1,893	1002	107.5	56.9
Tajikistan	2,266	900	1,880	1,458	770	43.7	23.3
Turkmenistan	776	241	623	1,610	2,584	319.6	513
Uzbekistan	7,590	4,058	6,504	6,669	1,025	277.4	42.6
<b>Russian heartland</b>	87,679	42,546	75,018	53,903	719	2,671.2	35.6
Belarus	5,780	6,233	5,582	5,017	899	92.5	16.6
Russia	70,000	25,000	58,500	35,562	608	2,161.8	37.0
Ukraine	11,832	10,313	10,937	13,325	1,218	416.9	38.1
<b>Greater Balkans</b>	17,045	10,547	14,893	13,242	806	319	21.4
Albania	1,100	0	825	1,151	1,395	11.1	13.4
Bosnia and Herzegovina	1,048	471	880	618	702	18.4	20.9
Croatia	2,161	1,326	1,886	730	387	31.4	16.6
Macedonia FYRO	465	511	451	500	1,109	12.8	28.3
Serbia and Montenegro	2,882	1,297	2,421	2,206	911	10.2	4.2
Bulgaria	3,179	571	2,498	1,436	575	62.2	24.9
Moldova	1,034	1,341	1,044	832	789	25.7	24.7
Romania	5,176	5,020	4,888	5,768	1,180	147.2	30.1
<b>Caucasus</b>	5,111	2,632	4,359	4,523	1,037	88.6	20.3
Armenia	651	300	548	647	1,179	13.7	25.0
Azerbaijan	2,479	1,841	2,227	2,422	1,088	44.8	20.1
Georgia	1,981	491	1,584	1,454	918	30.1	19.0
<b>Baltics</b>	5,404	704	4,194	2,019	481	74.2	17.7
Estonia	901	324	741	526	711	14.3	19.3
Latvia	1,353	162	1,047	493	470	24.8	23.7
Lithuania	2,468	218	2,406	1,000	416	35.1	14.6
<b>Eastern Europe</b>	23,465	2,220	18,043	12,471	691	318.9	17.7
Hungary	4,088	548	3,176	1,824	575	61.6	19.4
Czech Republic	4,381	865	3,457	2,073	600	42.4	12.3
Poland	11,740	609	8,927	8,572	960	185.4	20.8
Slovakia	2,267	79	1,716	959	559	24.5	14.3
Slovenia	989	130	768	610	795	5.0	6.5
United States of America	54,826	52,076	26,726	129,161	4,833	4,185.7	76.3
The Netherlands	4,224	4,552	2,194	6,628	3,021	24.9	5.9

\* Calculations: Total number of veterinarians (less 25% to account for administrative and teaching staff and other non-FAV), plus 1/5 of the technicians. To account for the predominance of small animal practitioners, the FAV for the United States and the Netherlands was calculated as 25% of the number of veterinarians and 25% of technicians.

FAV: farm animal veterinarian  
 VLU: veterinary livestock units  
 FYRO: Former Yugoslav Republics of

*Sources:*

- a) OIE (World organisation for animal health) (2002 data)
- b) Food and Agriculture Organization (2002 data)
- c) World Bank Little Green Data Book 2003 (34)

The major pattern there is private service, complemented by contracts with local practitioners in remote areas for typical public sector services, varying from meat inspection to border control (thus saving the State the expenditure of providing full-time professionals in low-volume locations).

### Government supervision

As a result of the increased privatisation of services, the role of a government Veterinary Service changes from the

implementation of disease control and food hygiene to supervising such activities (and the subcontractors). The challenge is to find a good balance between central and decentralised (i.e. provincial or county) supervision and to separate the contracting responsibility from the monitoring responsibility. Decisions are largely guided by the overall level of government decentralisation and by the budgetary autonomy of government agencies, as well as by the size of the country.

## Changing disease control policies

As part of the organisation of Veterinary Services, most of these countries may need to review their overall disease control policies. Many of these policies are broadly in line with internationally accepted guidelines. However, the implementation was, and still is, based not on a consensus with producers and processors, but on strong enforcement by 'veterinary police', as in Romania for example, or, in many countries, such as those of the former Soviet Union, by mobile veterinary police forces (*veterinarni militsija*) charged with internal and external border control. These types of enforcement are not compatible with either client-oriented private services or with a modern chain-based quality control system. They also tend to lead to corrupt practices, as seen in licensing or at veterinary checkpoints in some parts of the region.

In addition, disease policies in the Western countries are also in transition as the result of a variety of factors and events, including the mismanagement of the FMD outbreak in Western Europe in 2001-2002, the (partly related) loss of consumer confidence in government management of epizootic and zoonotic disease control, and the increased concern about biosecurity (which includes animal diseases such as anthrax and FMD). These issues may appear less relevant to the transition countries at present, but they are increasingly part of the international debate about epizootic disease control and food safety. The practical implications are now emerging, with the multilateralisation of rules on food safety (and quality) in international trade (see below).

The issue of epizootic disease control in the transition countries has been complicated by unrealistic control and prevention programmes which include too many diseases. Many of the FSU countries still pursue the Soviet policy of massive vaccination and control, despite the fact that vaccines are often not available, that diagnostic capability is insufficient to support disease control efforts properly, and that funds are not available to compensate farmers in cases of disease eradication through detection and slaughter. Veterinary policy on disease eradication has not changed, despite the major changes in animal ownership from state or state-affiliated farms to private farms. Private ownership would require indemnity payments at such a level that owners would co-operate. There is good evidence of price elastic responses of livestock owners (18), whose co-operation increases with higher indemnity payments, hence, indemnity payments must be flexible, based on market prices and set high enough to be attractive, especially to owners with a limited number of animals. Taking into consideration the many other demands made on government resources, few countries are willing and able to fund such programmes. On the other hand, concern about zoonotic disease (especially rabies, brucellosis and echinococcosis/hydatidosis) among local communities may reach such a point that these communities

start to organise their own control programmes, with or without state veterinary co-operation (26, 32).

## Organisation of food hygiene and public health

Food hygiene and veterinary public health have deteriorated during the transition period. Apart from some occasional outbreaks of anthrax or trichinellosis, the impact of the lack of food hygiene on public health has been surprisingly low (35), especially when compared to the resurgence of other zoonoses such as brucellosis and echinococcosis/hydatidosis (see above). This is probably related to the food purchasing and preparation habits in the region (6, 8, 24). However, global trade and the emergence of supermarkets will weaken the link between producers and consumers, decrease transparency and increase risk.

For most rural people, controlling zoonotic disease has a higher priority than food safety *per se*. An example of this is demonstrated by a community initiative in the Kyrgyz highlands to control brucellosis through an awareness campaign, livestock and milk testing, informal agreements not to sell infected animals and, with the help of the local veterinary services, vaccination (26).

Most government officials, however, appear more preoccupied with World Trade Organization (WTO) membership or EU accession. The WTO and the EU require Member Countries, especially exporting countries, to comply with the disease control standards of the WTO, or to convince the WTO and the OIE (World organisation for animal health) to change these standards in such a way that poor countries would also have access to international markets. Compliance may require profound changes, as follows:

- a) harmonisation of rules and systems
- b) risk reduction
- c) designing the appropriate organisational structure.

Compliance is mainly an issue in international trade, but some governments also perceive such compliance as a sign of recognition as a developed country. However, compliance evaluations conducted so far have focused on meeting the bureaucratic rules and standards developed by Western countries over decades. They do not consider the quality and cost-effectiveness of services to farmers and consumers.

Recent reviews of food hygiene in transition countries by the United States Department of Agriculture and the EU revealed a number of shortcomings in the infrastructure (outdated processing facilities, outdated laboratories and equipment), skills and especially in the provision of transparent quality assurance and monitoring (10, 30) (see also 'Review of Veterinary Services', below). Such reviews often seem to underestimate the effort and costs involved in updating these systems in transition countries, particularly as these countries

must also deal with many other legacies of the past. Moreover, their farmers do not enjoy the generous farm subsidies that paid, indirectly, for food safety reform in the rest of Europe.

However, the equivalency rule of WTO-governed trade allows countries to argue that their diagnostic and mitigation systems, although less sophisticated and expensive than those in Europe, Japan or the USA, are as effective and provide an equivalent level of disease control or food safety. To substantiate this argument, these countries must vigorously pursue replicability and quality control, as well as recognition of this equivalency in the Codex Alimentarius. Still, as demonstrated in 2003 by the closing of the USA and Japanese meat markets after a single case of bovine spongiform encephalopathy in Canada, international markets are 'finicky' (fastidious) and may disregard rules when such disregard is seen as politically (and even commercially) opportune. The organisation of animal health and food safety services should first support an adequate and affordable standard of herd health and food safety at the national level.

### Review of Veterinary Services

The Federation of Veterinarians in Europe (FVE), a trade association, evaluated the regulation of the veterinary sector in countries associated with the EU in Eastern Europe and the Baltics (11, 12). The FVE did not review the quality of Veterinary Services but focused on registration, professional training and conduct. The recommendations of the FVE include the following:

a) that awareness of the principles and requirements of the EU be increased, especially in these areas:

- animal health, in particular, the involvement of private practitioners in state veterinary duties and the role of approved and official veterinarians in animal health surveillance networks and notifiable diseases

- animal welfare, in particular, in the transportation and keeping of animals

- public health, in particular, the quality of ante- and post-mortem inspection of meat, milk hygiene and residue monitoring

- certification, in particular, the principles of certification

- the regulation of veterinary drugs, in particular, the prohibition of certain substances, the use of drugs and additives in food-producing animals and consumer protection, the prudent use of antibiotics, and pharmaco-vigilance

b) that measures be removed which impede the right to establish and the freedom to provide professional services, and that private practices be encouraged by facilitating access to loans, professional indemnity schemes, health and accident insurance, and pension schemes

c) that the issue of overproduction of veterinarians be jointly addressed by the FVE, local veterinary associations and national governments

d) that the role and status of veterinary technicians be monitored.

Other reports (20, 29, 30) were more critical, and their criticisms are confirmed by the observations of the author. Veterinarians are ill equipped, have rarely received further training over the past decade, are unfamiliar with business practices (accounting, taxes, etc.) and, especially in rural areas, face considerable problems in obtaining supplies and drugs.

In terms of veterinary education, many training facilities are inadequate. In particular, these facilities lack equipment, quality buildings and staff who are skilled in modern practice. The other major impediment, particularly in regard to food safety, is the overall carelessness in performance at all levels of the food production chain (8), as confirmed by the observations of the author. These factors all contribute to mediocre animal health, with relatively high neonatal mortality; deficiency and other production diseases; and questionable food safety.

At present, most transition countries operate a combination of private and public services. The lack of accounting and of budgetary transparency has prevented comparison and estimation of their respective benefits and costs.

Experience gained in projects financed by the World Bank indicates that, apart from affordability, a number of issues must be addressed to harmonise or 'mainstream' overall food safety and market access, including the following elements:

a) clarifying the confusion between quality and safety

b) limiting over-regulation

c) abolishing selective enforcement

d) integrating food laws and regulations into the overall legislative system

e) halting the multiplicity of responsible agencies

f) addressing the difference or 'mismatch' between the standards required by countries in the Organisation for Economic Co-operation and Development and by developing countries (24).

These issues also include the – somewhat perverse – attractiveness of food safety enforcement to centralised bureaucracies which want to recover their previous power (limited by the privatisation of many state functions in recent years), rather than ensure safe and affordable food as their top priority. Therefore, the countries in the region should carefully review the international food safety standards and draft a prioritised programme which fits their overall agricultural strategy and the needs of local consumers.



### Risk reduction

The monitoring of food hygiene through good manufacturing practice and hazard analysis of critical control points (HACCP) is not common in this region, although basic HACCP principles are commonly used by most domestic consumers buying and preparing food. Small-scale food processors are aware of the needs of these domestic consumers and maintain common standards, as demanded by the local market (6). Importing from, and/or exporting to, the global market has disturbed this simple supervisory system and led to confusing conflicts over exported and imported food (especially the export of extremely low-priced poultry legs to the FSU from the USA). To resolve such conflicts, there is a need to improve awareness about transparent pre-harvest and post-harvest safety methods when producing foods of animal origin.

The formal introduction of HACCP is complex. It is often less concerned with investment in infrastructure and equipment than with investment in staff training and in developing sound monitoring and reporting systems. This aspect should be strongly emphasised, as most managers in the region still believe that the majority of quality control problems can be solved by investment in hardware (22, 30) and that current skills are adequate. Indeed, increased awareness of HACCP, improvement of skills and the selective introduction of food safety standards may be a cost-effective policy in the short term. In the longer term, however, more profound changes are needed.

### Veterinary education

Reforming the animal health sector in Eastern Europe and the former USSR, as discussed above, has serious implications for veterinary education. The quality of veterinary training, as reviewed by the FVE, is highly variable in Europe and even more so in Eastern Europe and the FSU (12). Eastern European institutions have historically had more interaction with the rest of Europe, and so more or less remained up to date with technical developments, where policy and budgets allowed. In the USSR, veterinary education was largely theoretical and the quality of training varied greatly among different educational institutions (2, 4). Although some schools have modernised their curricula, including differentiating between veterinary practitioners and food hygienists (4), most educators in the former USSR have been isolated from modern developments in the rest of the world, due to limited skills in Western languages and lack of access to books, journals and other teaching materials. (Previously, the Soviet system provided for the translation and dissemination of key papers and books.) In some countries, the teaching staff compensate for their low salaries by requesting (additional) payments of student fees directly to the professors. Remediation will be lengthy but, as shown in the Baltics, can be accelerated by the following:

- a) improving language skills
- b) encouraging international exchanges

c) using the Internet

d) 'twinning' or forming close links with foreign institutions.

The other major requirement is a change in thought processes, as Purina so well expressed (19), i.e. appreciating the limitations of the system 'at home' and carefully reviewing and selecting opportunities and innovations from the 'outside world'. As mentioned above, stratifying schools, i.e. creating a few centres of excellence which produce advanced specialists, as well as a larger number of schools which produce general practitioners and food hygienists for a low-cost system, may be considered in the short term. In addition, the taxpayers of a number of smaller countries (Estonia, Moldova, Armenia, etc.) may find maintaining a high-cost veterinary school prohibitively expensive.

## Recommendations

These recommendations are based on two scenarios, derived from Rhodes and Hueston (21), which more or less confirm the existing situation.

The first scenario applies to countries which have a largely intact infrastructure and a history of private land ownership and animal ownership and veterinary practice. Endemic and zoonotic disease control measures are being established and further support is beneficial, but the primary goals are as follows:

- improved disease surveillance
- enhancement of production
- quality assurance
- increased food safety.

This scenario applies to most of the Eastern European countries.

The second scenario applies to countries with a rather dysfunctional infrastructure, limited experience or success with private sector farming and animal ownership, and often widespread poverty. The major objective of veterinary interventions in these societies is food security, closely followed by veterinary public health. The secondary goals are the control of endemic disease and the improvement of individual animal health. This scenario applies to many of the poorer FSU countries.

Both scenarios require a realistic disease control policy which is accepted by all participants in the animal health sector and able to be implemented, in terms of available skills, tools and budgets.

In the first scenario, development and investment strategies must focus on the following:

- a) well-targeted policies in the medium to long term
- b) investments in the development of:
  - epidemiological services
  - diagnostic services
  - veterinary education
  - cost recovery and privatisation of services
  - veterinary extension
  - support for professional organisations, as recommended in 1992 (7).

In the second scenario, development and investment strategy would focus on the following:

- a) the efficient use of natural resources, financial resources and human resources
- b) the use of pilot projects, emphasising short-term realisable benefits.

Short-term demonstration projects also help to gain local support, which will facilitate later project expansion. The specific foci of development should be:

- the design of a prioritised disease control programme
- in-service training
- judicious and well-designed, public-sector support
- improvements in policy and legislation.

The sequence of implementing these reforms should be based on the following:

- an appreciation and understanding of local social and technical constraints and opportunities
- the market outlook
- current skill levels
- the careful review and cost-benefit analysis of new concepts proposed by Western advisors and trade partners.

The present income levels of veterinarians and support staff allow, at least in the short term, for more labour-intensive approaches than those used in Western Europe. As such, plurality and affordability should be important patterns. Harmonisation, as promoted by the EU and WTO, should, in this respect, acknowledge the advantages and disadvantages of both sets of systems, adopting the good from each and ensuring that animal health interventions are affordable for non-subsidised farmers, and that food safety is affordable for consumers who depend on incomes which are often 10% or less of those in Western countries.

## Les services de santé animale en transition en Europe de l'Est et dans l'ex-Union des Républiques socialistes soviétiques

T.W. Schillhorn van Veen

### Résumé

Depuis une dizaine d'années, l'Europe de l'Est et l'ex-Union des Républiques socialistes soviétiques (URSS) traversent une période de transition économique qui a profondément marqué l'agriculture et entraîné une forte détérioration du secteur dans les zones rurales. Les exploitations ont changé de mains. La propriété de certains biens agricoles, comme le bétail par exemple, a été transférée à des travailleurs agricoles ou à d'autres personnes. Les organisations sociales et les structures de service implantées au sein de la société rurale sont confrontées à un avenir incertain. La période de transition s'est généralement accompagnée d'une dégradation des services ruraux, qui a également frappé les services de santé animale. Ce déclin est lié à la réduction du cheptel, au morcellement des élevages, au renchérissement des interventions des prestataires de services et au délabrement généralisé de l'économie rurale qui s'est traduit jusqu'à présent par un recul de la demande en services de santé animale.

On observe des différences considérables dans la manière dont ces pays gèrent la transition économique et ses effets. La situation de l'ex-URSS se caractérise essentiellement par les facteurs suivants :

- la rapidité avec laquelle le pays s'est débarrassé du lourd héritage des grandes fermes d'État et du système de planification centrale des services de santé animale ;
- l'importance des efforts déployés pour réduire la pauvreté ;
- la réflexion sur une adhésion éventuelle à l'Organisation mondiale du commerce et sur les exigences découlant d'une telle démarche ;
- la capacité de fournir des services peu coûteux à un secteur de l'élevage fragmenté et peu expérimenté.

En Europe de l'Est, les préalables à une adhésion à l'Union européenne (UE) constituent un autre facteur déterminant.

Dans un premier temps, le système vétérinaire mis en place pour servir le secteur de l'élevage pourra présenter des différences entre les pays selon le poids du passé, l'état d'avancement des réformes et la proximité des marchés occidentaux. Les pays les plus faibles sur le plan économique et dotés d'une pléthore de vétérinaires opteront vraisemblablement pour l'offre de services requérant beaucoup de travail mais peu d'investissement financier et se concentreront sur la sécurité sanitaire des aliments et la santé publique. Pour leur part, les pays candidats à l'adhésion à l'UE qui disposent de moyens financiers plus importants porteront sans doute leur attention sur l'amélioration de la surveillance des maladies, l'accroissement de la production, l'assurance qualité et le renforcement de la sécurité sanitaire des aliments. De ces choix pourront également dépendre les investissements consentis par ces pays pour moderniser les services publics, les laboratoires et les écoles vétérinaires.

### Mots-clés

Enseignement vétérinaire – Europe de l'Est – Ex-Union des Républiques socialistes soviétiques – Hygiène alimentaire – Politique de prophylaxie – Transition.



## Los sistemas de sanidad animal en transición en Europa del Este y en la ex Unión de Repúblicas Socialistas Soviéticas

T.W. Schillhorn van Veen

### Resumen

La transición económica que desde el decenio pasado ha tenido lugar en Europa del Este y la ex Unión de Repúblicas Socialistas Soviéticas (URSS) ha transformado profundamente el sector agrícola y su nivel de bienestar en las zonas rurales. Se ha modificado el régimen de propiedad de las explotaciones, se han transferido algunos activos, entre ellos el ganado, a los trabajadores de las granjas u otras personas, y las estructuras sociales y de servicios de la sociedad rural han quedado sumidas en la incertidumbre. En general, la transición ha resultado en un deterioro de los servicios rurales. También los servicios de sanidad animal se han degradado, en un proceso ligado a la reducción de la cabaña ganadera, la fragmentación de las explotaciones, el aumento de los costos de transacción de los proveedores de servicios y el declive general de la economía rural, que de momento se traduce en una menor demanda de servicios de sanidad animal.

Según el país de que se trate, hay diferencias considerables en la forma de manejar la transición económica y sus secuelas. En la ex URSS, entre los factores decisivos destacan los siguientes:

- la velocidad con que un país se deshace del legado soviético de grandes explotaciones estatales y un sistema zoonosanitario con planificación centralizada;
- los esfuerzos realizados para combatir la pobreza;
- la decisión de adherirse o no a la Organización Mundial del Comercio y las obligaciones que ello entraña;
- la capacidad de prestar servicios a bajo costo a un sector pecuario fragmentado y poco profesionalizado.

En Europa del Este, a todo ello se agregan los requisitos que impone la adhesión a la Unión Europea (UE), que constituyen un factor de gran importancia.

En un primer momento, la forma en que el sistema veterinario de cada país se organice para prestar servicios al sector ganadero puede variar en función de la herencia del pasado, la marcha de las reformas y la cercanía de los mercados occidentales. Los países con un menor nivel de renta y exceso de veterinarios pueden apoyar sistemas de bajo costo y utilización intensiva de mano de obra, centrados en la seguridad alimentaria y la salud pública. En cambio, los países de la futura ampliación de la UE, mejor dotados, pueden concentrarse en la vigilancia sanitaria, la mejora de la producción, la garantía de calidad y el aumento de la higiene de los alimentos. Esa orientación puede determinar asimismo las inversiones que esos países dediquen a mejorar su sistema público, los laboratorios y los establecimientos de enseñanza veterinaria.

### Palabras clave

Enseñanza veterinaria – Europa del Este – Ex Unión de Repúblicas Socialistas Soviéticas – Higiene de los alimentos – Política de control de enfermedades – Transición.



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