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LEGAL AND ECONOMIC ASPECTS OF ANTI-EPIZOOTIC ACTIVITIES IN THE REPUBLIC OF BULGARIA

V. Gaidardjieva*, Iv. Bozhkov

Trakia University, Stara Zagora, Bulgaria

ABSTRACT
In this research, the normative legal framework of the World Organization for Animal Health (OIE) and EU anti-epizootic activities was examined. Details about the economic losses of some infectious diseases with important health and economic significance at an international scale are given. The specific epizootic risk factors for Bulgaria and their manifestation in different regions of the country are clarified. The need for joint coordinated action with regard to anti-epizootic activity between the National Veterinary Service (Bulgarian Agency for Food Safety), regional veterinary departments, local authorities and the business (animal owners, food processing enterprises, trade organizations) to reduce or prevent direct and indirect economic losses from infectious diseases are discussed.

Keywords: animal health, epizootics, anti-epizootic activities,economic losses from contagious animal diseases

INTRODUCTION

Infectious diseases cause substantial losses for livestock husbandry with long-term effects on human health. There are 156 diseases that could affect both animals and humans (zoonoses). The most commonly encountered, at a global scale, are rabies, anthrax, tuberculosis, brucellosis etc. Infections animal diseases cause enormous direct and indirect economical losses manifested through high morbidity, mortality, impaired economy and trade in regional, national and international scale.

The aim of this research was to investigate and to motivate:

- the economic and social importance of some of most dangerous animal infectious diseases and zoonoses from historical and contemporary point of view;
- the need for normative legal regulation and international cooperation in the prevention and control of infectious diseases and zoonoses;
- the specific epizootic risk factors for Republic of Bulgaria and the role of the country in anti-epizootic activity as external boundary of the EC and Europe.

Correspondence to: *Assoc. Prof. Veneta Gaidardjieva, PhD, Faculty of Economics, Trakia University, Stara Zagora, Bulgaria, Phone: +359 42 699 424, E-mail: veng.sz@abv.bg*

The following methods were used in this study: historical, statistical economic, epizootological survey, expert evaluation etc.

RESULTS AND DISCUSSION

The retrospective epizootological analysis of losses caused by infectious disease from a historical point of view showed that incidence of rinderpest was high as early as in 18th century. This disease has caused the death of 300,000 cattle in the Netherlands, 100,000 in Sicily and 70,000 in Piedmont, Italy. Within 1794 - 1797, 3 million cattle have died of rinderpest in Italy. In France and Belgium, their number exceeded 10 million between 1713 and 1796 (1).

The substantial economic losses due to rinderpest and other infectious diseases have necessitated the organization of scientific anti-epizootic measures in national and global scale. In 1762 Claude Bourgelat, with the financial support of Bertin - Comptroller General of Finance, has founded the first high veterinary school in the world. Thereafter, high veterinary schools were open chronologically

in a number of European towns: Torino - in 1769; Gottingen - in 1771, Copenhagen - in 1773, Vienna - in 1777, Hannover - in 1778, London - in 1792, Madrid - in 1797, Petersburg - in 1808 etc. The foundation of high veterinary schools puts the control of infectious diseases on scientific grounds. With regard to the 250th jubilee of this historical event, the year 2011 is announced to be World Veterinary Year.

In 1836 the First International Veterinary Congress was held in Hamburg, where scientists from Europe and other countries have discusses the prevention and control of rinderpest and other infectious diseases. In 1924, on initiative of 28 countries, including Bulgaria, the Office International des Epizooties (OIE) was founded in Paris as intergovernmental organization that, by now, has 178 members from the five continents.

In 1968 OIE develops and approved the International zoo sanitary code (2) that deserves the name of World Veterinary Medical Constitution. The Code has, to present, undergone 10 editions reflecting the achievements in science and the international experience in infectious disease control. The main purpose of the Terrestrial Animal Health Code is to regulate and unify:

- the main principles and methods for prevention and control of infectious diseases with highest economic and public health impact;
- the diagnostic methods and tests used for detection of diseases;
- the veterinary sanitary conditions for production of biopreparations;
- the procedures for import, export and transit of animals and animal foodstuffs;
- the terms used in veterinary activities and the trade with animals and animal foodstuffs
- the conditions for transportation, quarantine and performance of disinfection and deratization;
- the conditions for filling in and issuing of international veterinary certificates.

In a special part of the Code, the professional obligations and ethics of veterinary specialists are listed. Also, an analysis of the risk accompanying the implementation of activities related to international trade is made.

On the basis of the Terrestrial Code, the EC has developed the community legislation for prevention and control of infectious diseases and zoonoses, which, in some aspects, is more stringent than international law. This stringency is motivated by the need to prevent the epizootic and economic hazards related to the free movement of goods, animals and people in the community. More than 60% of EC legislation in the agrarian sector is related to veterinary sanitary and anti-epizootic activities, including zoonoses and food safety.

During the past 15-20 years, despite the achievements of veterinary science and the strict legislation, infectious diseases are still a serious concern for animal and human health on a national, regional and international scale causing enormous losses.

The main reason for that are trade globalization and the participation of developing countries, world climatic changes, migratory birds, smuggling of meat and meat products, the variability of pathogens after passages, technology factors etc. Diseases, unknown so far have emerged, including zoonoses - avian flu, spongiform encephalopathy, swine flu - that are a serious challenge with considerable social, health and economic importance.

The information from the retrospective epizootological and economic analysis of some diseases at global scale is extremely worrying:
Foot and mouth disease (FMD) Data reported by the Chief Veterinary Officer of Great Britain Dr Jim Scudimore state that after the FMD epidemic in 2001, a total of 4,216,000 animals were killed, including 581,000 cattle; 3,484,000 sheep; 146,000 swine and 5,000 other species. Further, another 1,700,000 animals from the regions adjacent to affected farms were slaughtered. The direct economic losses at the outbreak's end were 10 billion dollars and indirect ones, resulting from restriction measures, discontinued export, reduced number of tourists - to over 30 billion dollars.

The FMD outbreak in 1977 on Taiwan (China) has caused the death of the almost entire swine population. The direct economic losses are 6.9 billion dollars. The sum of direct and indirect costs over 3 years from disease emergence to its eradication is 15 billion dollars

Bovine spongiform encephalopathy (mad-cow disease). For 1986-2007, the number of diseases and killed cattle in the UK is 184,558.

For the same period, the disease was detected in 26 countries in and outside Europe with total number of 190,376 affected and killed cattle. Apart the UK, most affected were: Ireland - 1,610 cases; Portugal - 1,051 cases, France - 998 cases, Spain - 741 cases; Germany- 415 cases; Switzerland - 464 cases, Italy - 144 cases etc.

The direct economic losses of this disease in the UK amount to 4.5 billion dollars and indirect are much higher. During the epidemic in IK and affected European countries, the consumption of beef has decreased by 40 to 50 %, which is related to substantial economic losses for meat processing industry and cattle husbandry.

Avian influenza. The avian flu outbreak in southeastern Asia in 2003-2004 has caused enormous direct economic losses to affected countries. In Vietnam, 44 million birds - 17.5 % of the entire population of the country was destroyed. In Thailand, destroyed birds were 29 millions (14.5% of fowl population). In Indonesia, the disease affected 50% of provinces. The number of destroyed birds was 16.2 million. Direct and indirect economic losses from the disease amounted to 32.4 million dollars.

The direct and indirect costs in affected countries reflected on their gross domestic product that was reduced by 1.5% for Cambodia, by 1.8% for Vietnam and by 0.5% for Thailand.

Rabies. The spread of rabies is one of most important epizootological, epidemiological and public health problems in the world. Despite the performed measures of control, the territorial distribution of the disease is becoming more broader. During 1975-1987 the cases of rabies in Europe were 128,987 in 20 countries, whereas from 2004 to 2006 - 7,388 cases in 11 countries.

The natural foci of rabies are a serious epizootological, ecological and epidemiological problem. In the USA, 7,967 cases were registered in 2002, 92% out of them from wild animals. Out of 29 human rabies cases observed after 1990 in the USA< 27 were caused by variants isolated from bats.

According to the WHO 55 thousand people in the world die annually from rabies, including 31 thousand in Asia and 24 thousand in Africa (Veterinárna Sbirka No 7-8, 2009 - B. Likov et al. (3).

African swine fever (ASF). During the 1970s, over 6 million pigs were destroyed in Spain and Portugal, and 1,200,000 - in Cuba.

In 2010-2011, ASF affects several countries in Central Asia causing economic losses. The number of pigs destroyed in Russia in 2010-2011 is over 100 thousand and the epidemic is still not under control.

Taking consideration on the enormous negative public health and economic impact of animal infectious diseases and zoonoses, a special meeting of G8 countries was held in July 2006 in Saint Petersburg for undertaking joint coordinated action in the following directions:

- better international cooperation in the surveillance and monitoring of infectious diseases;
- intensification of research and information exchange;
- support of the respective international organizations and existing global networks for early warning and reaction to epidemics and epizootics;
- encouragement of governments to provide timely and precise information for emerging diseases in the respective countries;
- support of developing countries (financial, technical and with specialists for increasing the capacity for prevention and control of infectious diseases);
- improvement of coordination between world organizations (WHO, OIE, FAO) working in the field of human and veterinary medicine;
- implementation of specific measures against avian influenza, including the creation of a WHO centre in Eurasia and Central Asia.

G8 governments and the EC have negotiated the provision of considerable financial funds for prevention and control of infectious diseases and zoonoses, including avian influenza in particular as followed **Table 1:**

Tabiel*

№	G8 member state	Resources provided
1.	Canada	57 million Canadian dollars
2.	France	1.4 billion euro
3.	Germany	40 million euro
4.	Italy	Pilot project for development of new vaccines
5.	Japan	155 million dollars
6.	Russia	45 million dollars
7.	Great Britain	1.4 billion pounds for 20 years
8.	USA	362 million dollars
9.	**European Commission**	**111 million euro**

*Veterinary News, No 9-10, 2006

This financial resource provided by the strongest most developed countries is a clear evidence for the practical implementation of the new OIE and EC concept about the economic effect of prevention.

The financial support of international donor organizations has made possible the development and successful implementation of the PVS system for evaluation of National Veterinary Services by the OIE. On the basis of expert assessments, OIE and donor organization provide funds to support countries in need for technical equipment and modernization of research and diagnostic activities and for harmonization of legislation with international regulations.

Bulgaria, being an OIE member since its foundation and EC member state since 2007 is directly related to the activities of both organizations and strictly fulfills both legal and epizootological commitments.

The normative legal framework of the Republic of Bulgaria (Veterinary Act (4) and regulations (5) is harmonized with EC legislation (6) and main principles and criteria of the Terrestrial Animal Health Code. The obligation and responsibility of the Republic of Bulgaria as external EC boundary are exceptionally great from both epizootological and economic point of view.

The retrospective and prognostic epizootological analysis performed showed that in the Republic of Bulgaria, there are numerous factors - geographical, social economic, technical and others, that pose an exceptionally high risk for penetration and distribution of infectious diseases in the country **(Table 2).**

Due to the specifics of the different infectious diseases and the possibility for transborder transmission, the risk factors for some regions of the country (mainly the southeastern part) are essential.

The performed epizootological analysis over the last 20 years (1991-2011) showed that all 11 FMD foci in Bulgaria were in southeast Bulgaria (Burgas, Haskovo, Yambol). Some of infectious diseases with great economic impact are observed in boundary regions. Blue tongue disease was detected in Burgas, Haskovo, Yambol, Kardzhali, Smolyan, Vidin. Brucellosis in sheep, caused by Brucella melitensis, which also affects people, was first observed in border regions with Greece and Turkey (Smolyan, Yambol, Haskovo).

Table 2.**

No	Specific epizootological factors in the Republic of Bulgaria
1.	The Republic of Bulgaria is external boundary of the EU and transit crossroad between the Near East, Asia, Africa and Europe.
2.	Removal of wire fence from the southern boundary
3.	Discontinuation of vaccination against FMD and classical swine fever
4.	Social contacts with the Republic of Turkey and other neighbouring countries
5.	Mixed herds in pastures of settlements (cattle, sheep, goats)
6.	Extensive import of animal foodstuffs and live animals
7.	Closure and reduction of primary diagnostic units (Regional Veterinary Service, Regional Veterinary Inspection)
8.	Closure and reduction of incinerators
9.	Limited potential for performing general prophylaxis measures in private farms
10.	Pasture rearing of East Balkan pigs and the role of wild pigs in the epizootology of classical swine fever, African swine fever, FMD etc.
11.	Lack of zooprevention fund for compensation in case of epizooty
12.	Adaptation events of administrative and psychological aspect after the creation of Bulgarian Food Safety Agency
13.	Migratory bird routes
14.	Climatic changes — migration of birds and insects
15.	Other factors (smuggle, stray dogs, bioterrorism)

****Bozhkov, L, G. Nikolova, L. Kostadinova.** Organizational, legal, veterinary sanitary and technological aspects of zoning and compartmentalization in anti-epizootic activities, In: Proceedings of the Conference of the Union of Scientists in Bulgaria, Stara Zagora, 2-3.06. 2011 (in print)

Bulgaria has a traditionally rich experience in infectious disease control and has always been a reliable barrier to their spread in European countries. In 1914-1915, due to the exceptional efforts of the few Bulgarian veterinary specialists, Bulgaria managed to eradicate rinderpest and did not allow its spread in European countries. In 1973 Europe was protected against the exotic Asia 1 FMD outbreak that affected all Middle East countries and Turkey. In 2011, the emerging FMD foci in the border regions with the Republic of Turkey were rapidly put under control and eradicated.

The normative legal framework of the Republic of Bulgaria (Veterinary Act and regulations) are, in their major part, related to regulation of measures for prevention and control of infectious diseases and preventing economic losses. By virtue of the Veterinary Act, art. 127, a Central Epizootic Committee for coordination and control of suddenly emerging infectious diseases with significant public health and economic impact was created. It has the following structure **(Fig. 1).**

Epizootic committees to districts and municipalities have been created, headed by district governors and mayors or their deputies.

Both our and international experiences have shown that the prevention and control of diseases could be efficient only when they are a state policy - policy of parliaments, governments, local executive power, animal owners and the business.

Central Epizootic Committee to the Council of Ministers
Headed by: Chairman - Deputy Prime Minister Vice-chairman - Minister of Agriculture and Food Secretary - Director General of the National Veterinary Service (Bulgarian Food Safety Agency)
Members Representatives of:
Ministry of Interior
Ministry of Defence
Ministry of Finance
Ministry of Health
Ministry of Transport, Information Technology and Communications
Ministry of Environment and Water
Ministry of Economy, Energy and Tourism
Ministry of Agriculture and Food

Fig. 1

Veterinary Act, Official Gazette, 8/ 25.01.2011 (art. 127)

A significant flaw in the current activities of the Central Epizootic Committee to the Council of Ministers and of district and regional epizootic committees is the absence of representatives of the business and branch organizations in their structure. The Prevention and control of infectious diseases is related to enforcement actions and economic losses that have a direct impact on business. That is why, respective amendments in the national normative legal framework are advised.

Being an external boundary of the EC, the Republic of Bulgaria fulfills strictly the engagements but they are nit fully compensated by the EC. Animal owners from all 27 EC member states having suffered economic losses due to eradication of acute infectious disease outbreaks receive only 60% of the cost of dead or destroyed animals.

The epizootic risks for central EC member states and Europe are significantly lower compared to those posed to Bulgaria. At the same time, the Republic of Bulgaria should pay the additional compensation of 40% to farmers from the state budget. From both legal and economic aspects, the equality of EC member states is not in favour of our country as the anti-epizootic activities are concerned.

Being an external boundary of the EC in infectious disease control, the Republic of Bulgaria spends additional budget funds to protect the other EC countries without any financial compensation to the detriment of Bulgarian taxpayers and particularly the business.

MEASURES AND RECOMMENDATIONS:

1. Infectious animal diseases and zoonoses are a constant threat for livestock husbandry and the population on a global scale and cause enormous direct and indirect economic losses.
2. The prevention and control of infectious diseases should be a policy of the state. It requires joint coordinated activities of international organizations, governments and veterinary services.
3. International organizations (OIE, FAO, WHO), together with G8, EC countries and banks should keep on a policy for financial support of countries in risk at the different continents in their anti-epizootic activities.
4. The Republic of Bulgaria, being an external EC boundary, performs strictly its obligations with regard to prevention and control of infectious diseases coming from the Near East, Asia and Africa, despite the

increased risk. The expenses related to the anti-epizootic activities are not, however, adequately reimbursed by EC funds.

5. It is necessary that the competent Bulgarian authorities make a well-argumented proposal to EC institutions for adequate compensation of expenses made by the Republic of Bulgaria for anti-epizootic activities aimed to protect the external EC boundary.

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