Chapter 16

Improvement of Food Security Through Reforming of Domestic Veterinary Service: Case of Russia

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ABSTRACT

The chapter gives an overview of current issues of achievement of food security through reforming of veterinary service in the light of the social, ecological, and economic development of the society. The authors analyze certain challenges of food security existing in emerging countries, including expansion of market relations within veterinary service. The results of organizational and economic reforms of veterinary service are assessed on the case of Russia in a form of the survey of the heads of regional veterinary centers. Such issues as governmental and public regulations of quarantine operations and the most dangerous animal diseases are also discussed. In order to improve food security, the authors justify the measures for competition and demand stimulation, smoothing consequences of market imperfections, encouraging veterinarians’ efforts on reducing the negative impact of livestock breeding on the environment.

INTRODUCTION

Livestock breeding is an important sector of the global agriculture. In many countries, this sector is more advanced compared to crop production. One-third of cropland is occupied by forage crops for the purposes of animal husbandry.

In the modern conditions, livestock breeding largely determines food security of the countries. Livestock products provide a full range of nutritional value. Namely, they are the sources of energy, bio-digestible
minerals and vitamins, and high-quality animal protein containing all essential amino acids. Each person should consume above 20 grams of animal protein per day for a healthy diet. This can be achieved by annual consumption of 33 kg of meat, or 45 kg of fish, or 60 kg of eggs, or 230 kg of milk, respectively. Both production and consumption of animal products grow rapidly throughout the world. According to the forecast of the Food and Agriculture Organization of the United Nations [FAO] (2015), world meat production is expected to double by 2050, mainly owing to developing and emerging countries. The growth rate of meat production could exceed the growth rate of the world population. The possibility of advancing growth of meat sector in the developing and emerging countries was revealed. Such countries will be able to satisfy their domestic demand at the expense of their own production (FAO, 2015).

However, the growing scale of livestock is accompanied by a wide range of problems. One of the main problems is an environmental impact in the forms of degradation of pastures, irreversible changes of the local genetic resources of animals and plants, increasing water consumption, soil and water pollution with animal waste, as well as drugs used in animals breeding. Thus, ensuring animal health is one of the most important challenges of combating negative environmental impact. This is supported by ever-growing attention of scientists and experts, who consider the development of veterinary service in terms of its contribution to the sustainable development of the society and ensurance of food security (Davis, 2008; Gerber, Mottet, Opio, Falcucci, & Teillard, 2015; Ipema, Bleumer, & Lokhorst, 2011). Over the years, veterinary professionals have played significant roles not only in animal health, but also in human health and welfare, food quality, food safety, and food security (Caceres, 2012). Modern veterinary practice includes a series of activities that lead to environmental pollution, soil degradation, and contamination. The inevitable consequences of the veterinary interventions are a collection, recycling, and disposal of biological waste. The problem of biological waste disposal and destruction is relevant for a number of countries, especially emerging ones (McLean, Watson, & Muswema, 2007; Traverse & Aceto, 2015; Osipova, 2008; Popkova, Dubova, Yakovleva, Azarova, & Titova, 2014). In addition, negative impact on the environment may be caused by the veterinary treatment of cattle, disinfection, disinfestation, and deratization. This also contributes to soil degradation as a result of the chemical effect of disinfectants.

Many publications are devoted to the research of the possibilities and ways to reduce antibiotic treatments in veterinary (Trevisi et al., 2014; Mohring et al., 2009; Caruso et al., 2013). In the developed countries, much attention is paid to the issues of ensuring animal welfare as an aspect of decisions about whether animal-usage systems are sustainable (Velarde, Fàbrega, Blanco-Penedo, & Dalmau, 2015; Broom, 2010; Da Silva & Naas, 2012).

Based on the vision of “one medicine”, scientists consider the role of veterinary medicine in protecting food security and safety (Pappaioanou, 2004; Sargeant, 2008; Steele, 2008). Dividing the concepts of food security and food safety, in this chapter, the authors address the food security in relation to the veterinary service understanding that the activities of veterinary services have a significant impact on food security which is relatively homogeneous over the four components: availability, accessibility, utilization, and sustainability. According to Zinsstag, Schelling, Waltner Toews, and Tanner (2011), the concept of “one medicine” should be transformed into the concept of “one health”, and even “ecosystem health”. Considering the intensifying processes of globalization, it should assume a global scale.

At the same time, the above-mentioned problems related to veterinary service remain relevant for the majority of the emerging countries because they have not yet found any optimal solutions of economic issues of veterinary care. In many countries, demand for veterinary services is quite low because of the low income of farmers and lack of qualified veterinarians, insufficient technical, financial, and