Animal and Plant Health Inspection Service
U.S. DEPARTMENT OF AGRICULTURE

Report on the Review of Lithuania's Animal Health Statuses for Swine Diseases

Veterinary Services
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Executive Summary

The United States Department of Agriculture's Animal and Plant Health Inspection Service (APHIS), in collaboration with the Canadian Food Inspection Agency (CFIA), has conducted a review of the European Union (EU) animal health statuses for four swine foreign animal diseases – foot-and-mouth disease (FMD), swine vesicular disease (SVD), classical swine fever (CSF), and African Swine Fever (ASF). APHIS currently recognizes Lithuania as free from FMD and SVD, and as low risk for CSF. ASF is present in Lithuania since 2014 and implementation of EU regionalization strategies to control the disease are ongoing. APHIS has selected Lithuania as a representative Member State for the EU and conducted this review to determine whether or not conditions in Lithuania justify maintaining the EU's animal health statuses for the above diseases.

The objective of this review is to determine whether conditions in Lithuania justify maintaining its animal health statuses and that of all EU Member State for the above diseases. The review consisted of a document review and a site visit in Lithuania from September 9 to 12, 2019 to verify and complement all information APHIS has collected and analyzed relevant to the factors used to conduct evaluations to establish initial animal health statuses. All information was collected from records of State Food and Veterinary Service of the Republic of Lithuania (SFVS), the EU's Food Safety Authority (EFSA), the World Organization for Animal Health (OIE), and other publicly available information. All information and data gathered during the site visit, along with observations by the site visit team are incorporated into this review report.

Based on the above, APHIS concluded that the likelihood that the disease agents for FMD, CSF, and SVD are present in Lithuania is negligible, and that sufficient import measures exist to prevent their entry into the country. On the other hand, the ASF virus is present in Lithuania and is circulating in domestic swine and wild boar. APHIS further concludes that detections of ASF particularly in wild boar are expected to continue to occur, and that detections in domestic swine appear to be declining consistent with the trend of the disease in other affected Member States. Review of the veterinary infrastructure information provided by Lithuania demonstrated an adequate infrastructure for rapid detection of the four diseases, disease surveillance, and control and eradication. In addition, Lithuania has demonstrated a history of prompt reporting of disease events and taking appropriate measures to prevent their export to the United States.

The information provided by Lithuania support the continuation of the current APHIS-granted animal health statuses for FMD, CSF, ASF, and SVD and related import requirements. Recognition of these statuses will be maintained until the next APHIS review or until a change in Lithuania's animal health status is reported.

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Acronyms

ABP	Animal Byproducts
ADNS	Animal Disease Notification System
AIRBC	Agricultural Information and Rural Business Center
APHIS	Animal and Plant Health Inspection Service
ASF	African swine fever
AV	Authorized Veterinarian
BFVCD	Border Food and Veterinary Control Department
BIP	Border Inspection Post
CCP	Critical Control Point
CDB	Register of Farm Animals
CFR	U.S. Code of Federal Regulations
CF	Commercial Farm
CSF	Classical swine fever
CVED	Common Veterinary Entry Document
CVO	Chief Veterinary Officer
DVO	District Veterinary Officer
EC	European Commission
EFSA	European Union's Food Safety Authority
ELISA	Enzyme-Linked Immunosorbent Assay
ERP	Electronic Labeling System
EU	European Union
FBO	Food Business Operator
FMD	Foot-and-mouth Disease
HACCP	Hazard Analysis and Critical Control Point
IDCC	Infectious Disease Control Center
IPT	Indirect Immuno-peroxidase Test
NFVRAI	National Food and Veterinary Risk Assessment Institute
NCF	Non-commercial Farm
OIE	World Organization for Animal Health
OV	Official Veterinarian
PCR	Polymerase Chain Reaction Test
QMS	Quality Management System

RT-PCR	Real-time Polymerase Chain Reaction Test
RVO	Regional Veterinary Officer
SFVS	State Food and Veterinary Service of the Republic of Lithuania
SVD	Swine vesicular disease
TRACES	Trade Control and Expert System
VSD	Veterinary Sanitary Department

Report on the Review of Lithuania's Animal Health Statuses for Swine Diseases

Introduction

Consistent with regulations in title 9 of the *Code of Federal Regulations* (9 CFR 92) [1], the Animal and Plant Health Inspection Service (APHIS) has conducted a review of the European Union's (EU) animal health statuses for four swine foreign animal diseases, namely, foot-and-mouth disease (FMD), classical swine fever (CSF), swine vesicular disease (SVD), and African swine fever (ASF) [1]. As part of this EU review, APHIS has selected Lithuania (officially, the Republic of Lithuania) as one of 13 representative Member States included in the review.

Lithuania is a country situated in the Baltic region of Europe along the southeastern shore of the Baltic Sea. Lithuania borders Latvia to the north, Belarus to the east and south east, Poland to the south, the Kaliningrad region of Russia to the south west, and the Baltic Sea to the west. Administratively, Lithuania is divided mainly into 10 counties and 60 municipalities [2]. The county is a higher administrative unit and is formed from the territories of municipalities characterized by common social, economic and ethno-cultural interests. Municipalities consist of residential areas, which are divided into urban and rural residential areas. Cities and towns are attributed to urban, townships, villages and isolated farmsteads – to rural residential areas.

APHIS currently recognizes Lithuania as free from FMD and SVD, and as low risk for CSF. FMD last occurred in domestic pigs in 1992 and CSF last occurred in domestic pigs in 2011. SVD has never been detected in Lithuania. ASF is present in Lithuania and implementation of EU regionalization strategies to combat ASF is ongoing. APHIS conducted this review of Lithuania to determine whether or not conditions justify maintaining its animal health statuses and that of all EU Member State for the above diseases. The review consisted of a document review and a site visit conducted in Lithuania from September 9 to 12, 2019 to verify and complement all information APHIS collected and analyzed relevant to the factors used to conduct evaluations to establish initial animal health statuses as described in 9 CFR Section 92.2 [3]. APHIS collected all information from records of State Food and Veterinary Service of the Republic of Lithuania (SFVS), the European Union's (EU) Food Safety Authority (EFSA), the World Organization for Animal Health (OIE), and other publicly available information. All information and data gathered during the site visit, along with observations by the site visit team are incorporated into this review report.

This review report presents a comprehensive representation of Lithuania's veterinary infrastructure, livestock demographics, livestock movement controls, surveillance programs, disease control capabilities, import and export requirements, and emergency response systems. For FMD, CSF and SVD, APHIS aimed to determine: 1) the hazards are not present in Lithuania; 2) the hazards are unlikely to be introduced into Lithuania and ultimately infect or contaminate the commodity being exported to the United States due to measures taken by SFVS; and, 3) if Lithuania has an incursion, it will be rapidly detected and eradicated, and exports to the United States will be promptly stopped to prevent the introduction of the hazards into the United States. Since ASF is present in Lithuania, APHIS has reviewed its implementation of EU's ASF regulations, control and regionalization strategies in domestic and wild boar populations, animal identification systems, trade restrictions and traceability, and the ability to control export procedures and certify its exports in accordance to APHIS import requirements. The above information is followed by APHIS' conclusions and recommendations regarding the animal health statuses for swine diseases in Lithuania.

[1] Lists of APHIS-recognized animal health statuses of regions regarding specific animal diseases or pests, or acceptable commodities are available at: APHIS Animal Health Status of Regions.

1 Veterinary authority and infrastructure

1.1 Legal authority

The SFVS is the main animal health authority responsible for developing, implementing, and enforcing all animal health, food safety and quality, and welfare policies and regulations in Lithuania. The main legal authority for the animal health activities of the official veterinary services in Lithuania resides in the Law on Veterinary Activities (the Law) [4]. The Law regulates the main tasks and responsibilities of the SFVS, ensures access by government officials to private property, and gives the SFVS powers of inspection and enforcement, including the power to impose administrative penalties, lays down basic import, trade, and movement controls, stipulates the requirements for herd registration and animal identification, and describes general disease control and eradication measures. The Law further stipulates the obligations of veterinary officials, private veterinarians, and animal keepers with regard to reporting animal infectious diseases. Secondary legislations in the form of Orders of the Director of the SFVS prohibit vaccination of swine against CSF; regulate the handling, processing, and marketing of animal waste; and specify surveillance measures for CSF, SVD, FMD, and other contagious animal diseases.

The primary EC legislation pertaining to control of FMD, CSF, SVD, and ASF are listed in Figure 1 with the corresponding transposition into Lithuanian legislation [5].

Figure 1: Primary EC legislation pertaining to FMD, VSF, SVD, and ASF

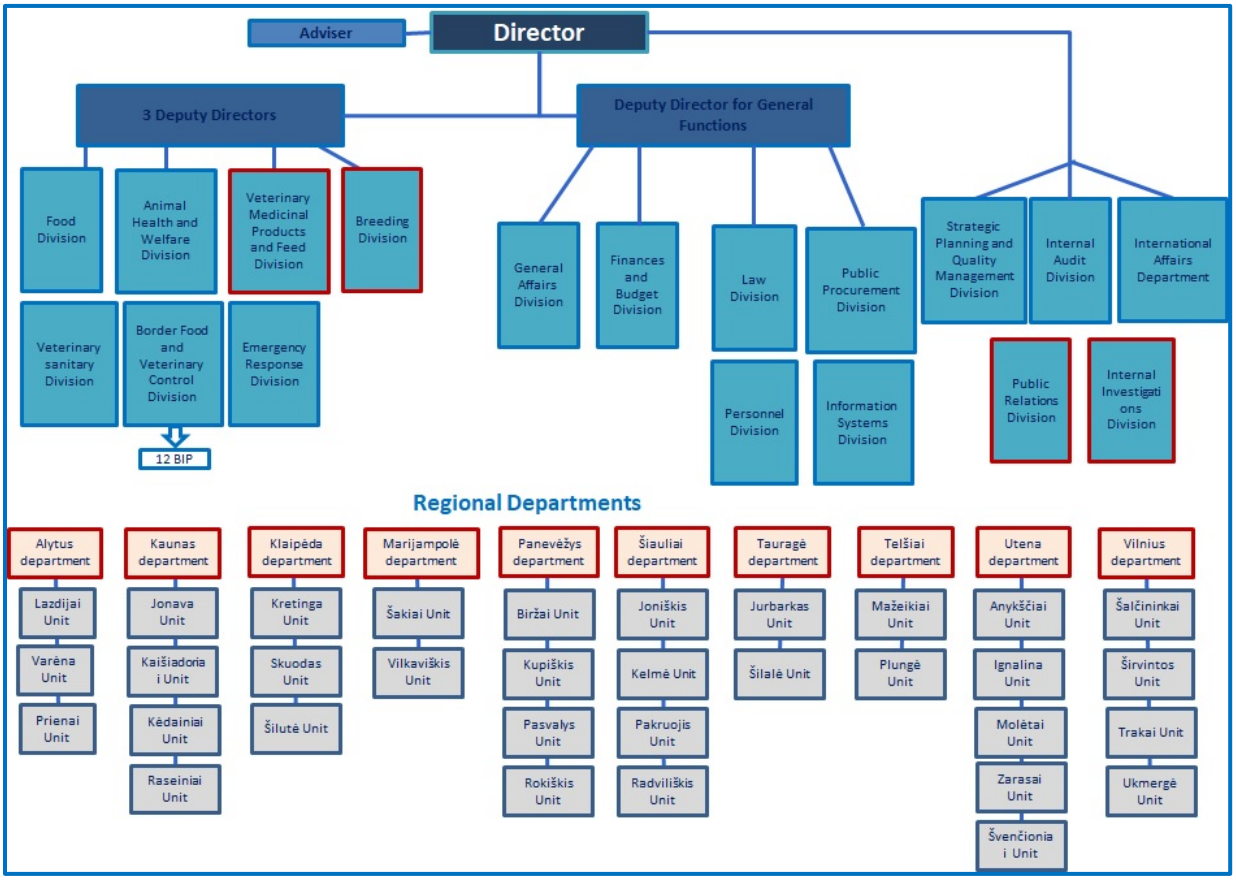
Disease	EC legislation	Lithuanian legislation
CSF	Council Directive 2001/89/EC on Community measures for CSF control (last amended)	Order No. 283 on approval of the requirements for CSF control (as last amended)
	Commission Decision 2002/106/EC Diagnostic Manual for CSF testing and confirmation (as last amended)	Directly applicable to Member States (Order No. B1-591)
SVD	Council Directive 92/119/EEC on control of certain animal diseases and specific SVD measures (as last amended)	Order No. 284 (as last amended)
	Commission Decision 2000/428/EC diagnostic procedures for SVD testing, confirmation & differential diagnosis	Directly applicable to Member States
FMD	Council Directive 2003/85/EC on Community measures for the control of FMD	Order No. B1-755 on approval of requirements for control of foot and mouth disease (as last amended)
	Commission Decision 91/42/EEC criteria applied for drafting FMD contingency plans	Directly applicable to Member States
ASF	Council Directive 2002/60/EC on specific provisions for the control of ASF	Order No. B1-892
	Commission Decision 2014/709/EU concerning ASF control measures in certain Member States (as latest amended)	Directly applicable to Member States (Order No. B1-264)

In addition, feeding of food waste to pigs has been prohibited in Lithuania since 2008 in accordance with EC and Lithuanian regulations, unless by express and founded resolution authorized by SFVS. Likewise, it is prohibited to feed pigs with waste coming from waste disposal sites.

1.2 Organizational structure and functions

The SVFS had been organized into two main levels, the SFVS headquarters in Vilnius and 52 territorial SFVS offices. In September 2019, SFVS added 3 Deputy Directors at the central level and reorganized its 52 territorial offices into 10 regional departments overseeing 33 territorial offices. The Chief Veterinary Officer (CVO) heads SFVS. Figure 2 shows the new organizational structure for SFVS [6].

Figure 2: New Organizational Structure of SFVS Territorial offices



At the central level, SFVS consists of 7 divisions directly involved in animal health program activities and headed by 3 Deputy Directors, namely: animal health and welfare, emergency response, veterinary medicinal products and feed, veterinary sanitary, border food and veterinary control, breeding, and food divisions [5, 6]. There are 11 other divisions responsible for administrative, financial, audit and support functions under a fourth Deputy Director. In total, SFVS employs 174 staff members at its central offices [5, 6].

The Veterinary Sanitary Division (VSD) is responsible for control of animal origin food and processing, approval and registration of food business operators (FBOs), inspections at slaughter and processing plants, and export control (see section 7) [5-7]. The Border Food and Veterinary Control Department (BFVCD) directs all inspections and control operations at the various BIPs in Lithuania (see section 6.8.4). The BFVCD employs 145 staff

members to conduct inspection activities. The National Food and Veterinary Risk Assessment Institute (NFVRAI) is the national reference laboratory which employs 309 staff members.

The regional SFVS consists of 10 regional departments; each regional department is supervised by a Regional Veterinary Officer (RVO) who is responsible for managing all animal health programs in his/her region including supervision of territorial offices within that region. There are 33 territorial or local offices with at least one Official Veterinarian (OV) which are headed by a Territorial or District Veterinary Officer who manages all activities related to animal health and welfare and food safety [5, 6, 8]. The main functions of territorial SFVS are:

1. Conduct all animal health and welfare programs including control, planning and enforcement of legislation for endemic diseases programs, surveillance and monitoring, farm registration, identification of animals, and response and control of outbreaks;
2. Conduct the official animal traceability program which supports all animal health programs and ensures the safety of domestic and exported animals and animal products;
3. Registration and control of supplies for animal use, such as drugs, vaccines and animal feed to provide quality guarantees for the health of animals;
4. Control of animal slaughter and handling of animal and non-animal food to ensure the conformity with requirements on food safety, quality, labelling and supply information on the goods including indication of prices and other mandatory parameter;
5. Certification of exported animals and animal products to ensure compliance with requirements of importing countries; and,
6. Approve businesses subject to veterinary control and approve or register food handling and feed businesses.

SFVS implements the Quality Management System (QMS) program oriented towards continuous improvement of its processes and must be applied in all territorial units of SFVS. The QMS includes uniform standardized control procedures and instructions to conduct work processes (inspections, sampling, etc.) in accordance with standard ISO 17020/2012 “Requirements for the operation of various types of bodies performing inspection”. More than 200 procedures and 89 checklists have been developed for this program [5].

1.3 Authorized veterinarians

The SFVS also contracts with private veterinarians to authorize them to perform certain duties, including monitoring the animal health and welfare status on farms and collecting samples for disease monitoring. To become an authorized veterinarian (AV), the veterinarian must be recommended by an OV and must submit an application for authorization to perform certain tasks in a specific geographic area. SFVS provides AVs with regular trainings related to ASF, CSF, FMD and SVD activities. AVs report their activities to the DVO on a monthly basis who must regularly evaluate their performance. AVs are paid by SFVS for performing official activities and contracts must be renewed annually. The site visit team reviewed a sample contract and interviewed several SFVS officials and AVs and found out that the SFVS can penalize AVs who do not perform their official duties, falsify records, or submit incorrect expense claims. In addition, SFVS issues and controls all licenses to practice veterinary medicine in the country and can suspend the licenses of AVs if they are found falsifying records, claims, or expenses [5, 6, 9].

1.4 Financial Resources

All SFVS activities of are financed from the national budget of Lithuania including emergency response activities in the event of a disease outbreak. During 2017 to 2019, the annual SFVS budget has been steady ranging between €28.3 million to €29.5 million and the majority of which was allocated to surveillance and monitoring

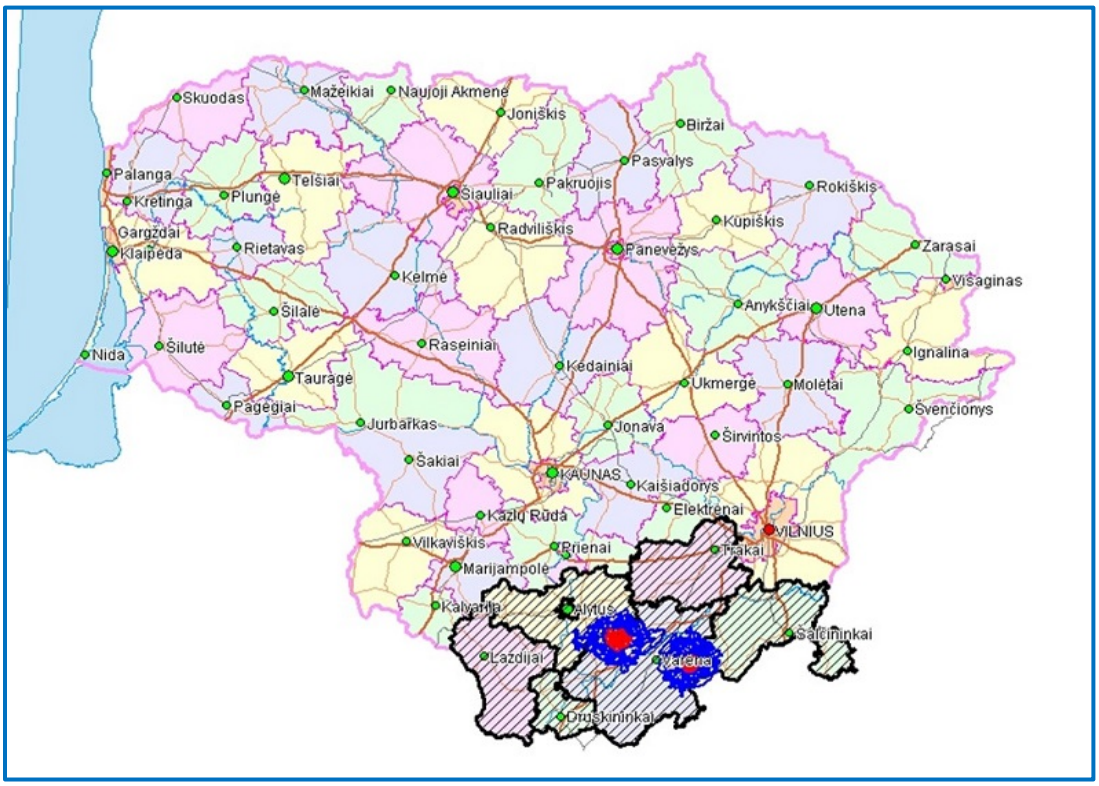
of endemic and exotic diseases including response and control of ASF outbreaks [5].

2 Status of the hazards in Lithuania

FMD was eradicated from Lithuania in 1982. The OIE lists Lithuania as a FMD free where vaccination is not practiced. The last outbreaks of CSF in domestic swine in Lithuania occurred in 2009 (1 outbreak) and 2011 (5 outbreaks). Lithuania in listed on the OIE's list of CSF free countries. SVD has never been reported in Lithuania [5, 6, 9, 10]. The only wild species present in Lithuania with epidemiological importance for FMD, CSF, and SVD, is the central European wild boar (*sus scrofa scrofa*). Wild boar is an invasive species which is widely distributed in Lithuania. FMD has never been reported in susceptible wild species. Similarly, there have been no reported occurrences of CSF and SVD in wild species. ASF is circulating in wild boar in Lithuania since 2014; the disease was detected for the first time in Lithuania in wild boar [5, 9].

ASF has been present in domestic swine and wild boars in Lithuania since 2014. Lithuanian officials stated that the disease was likely introduced from Belarus following its detection in that country in 2013 close to the border with Lithuania. Following ASF detection in Belarus, SFVS established a 10 km buffer zone along the border with Belarus and implemented movement and border controls, active and passive monitoring of all swine farms, and strict biosecurity measures such as prohibiting outdoor keeping of pigs and slaughter of pigs in farms with low biosecurity. However, in January of 2014, two cases of ASF were detected in wild boar close to the border with Belarus as shown in Figure 3 [5, 6, 9, 10].

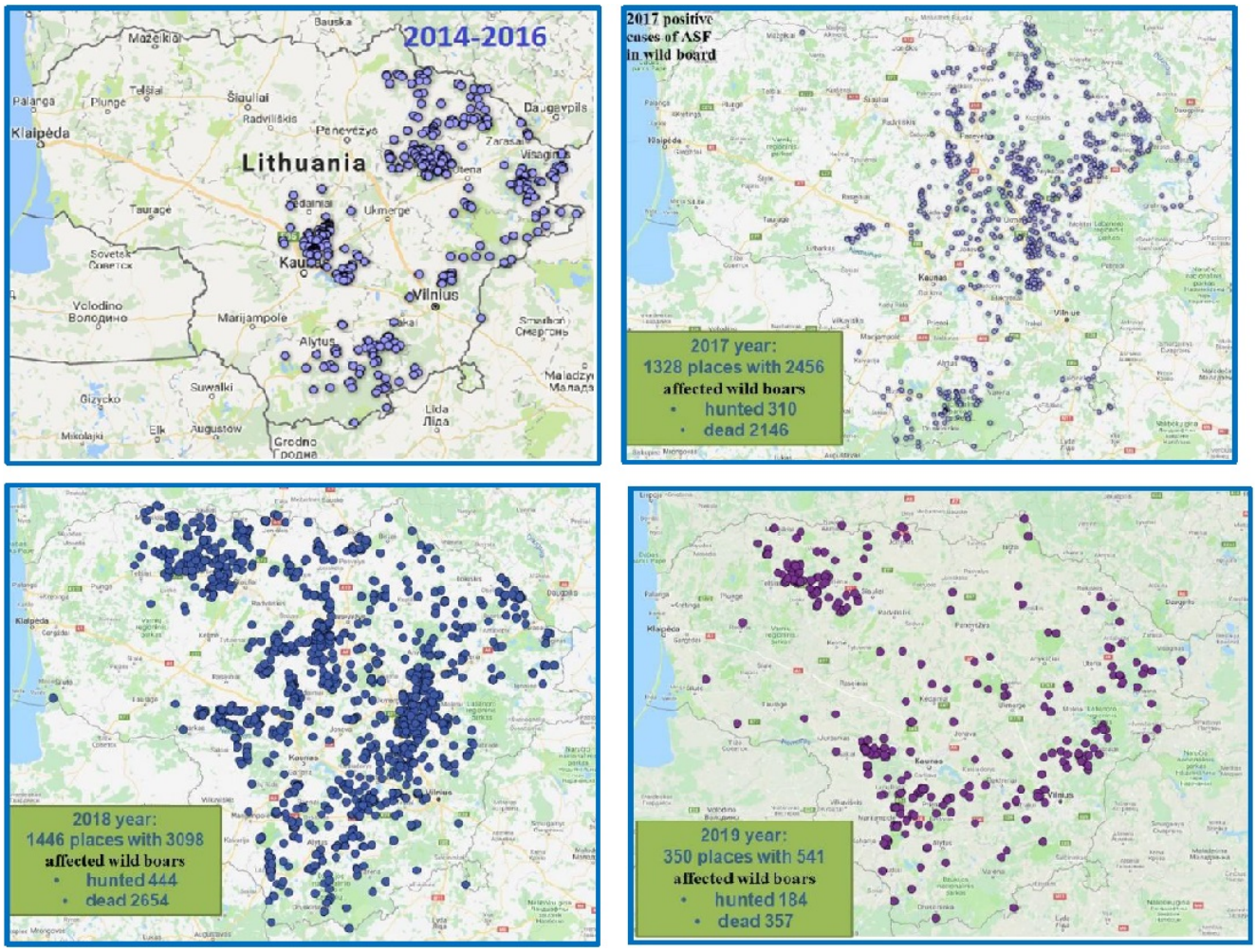
Figure 3: Location of first wild boar cases detected in 2014



The disease has spread in wild boar populations and in domestic swine, mainly in backyard farms with less than 10 pigs per farm. Until September 2019, a total of 6790 hunted and dead wild boar cases were detected in Lithuania [9-12]. Figure 4 shows the evolution of ASF in wild boar from 2014 to 2019. As shown in the Figure 4, the evolution of ASF in wild boar shows that the peak of the epidemic occurred in 2018 and the trend appears

to be declining. According to SFVS officials, this may be due to the wild boar population succumbing to ASF, or the result of implementation of wild boar population management strategies [9].

Figure 4: Evolution of ASF in wild boar 2014 – 2019

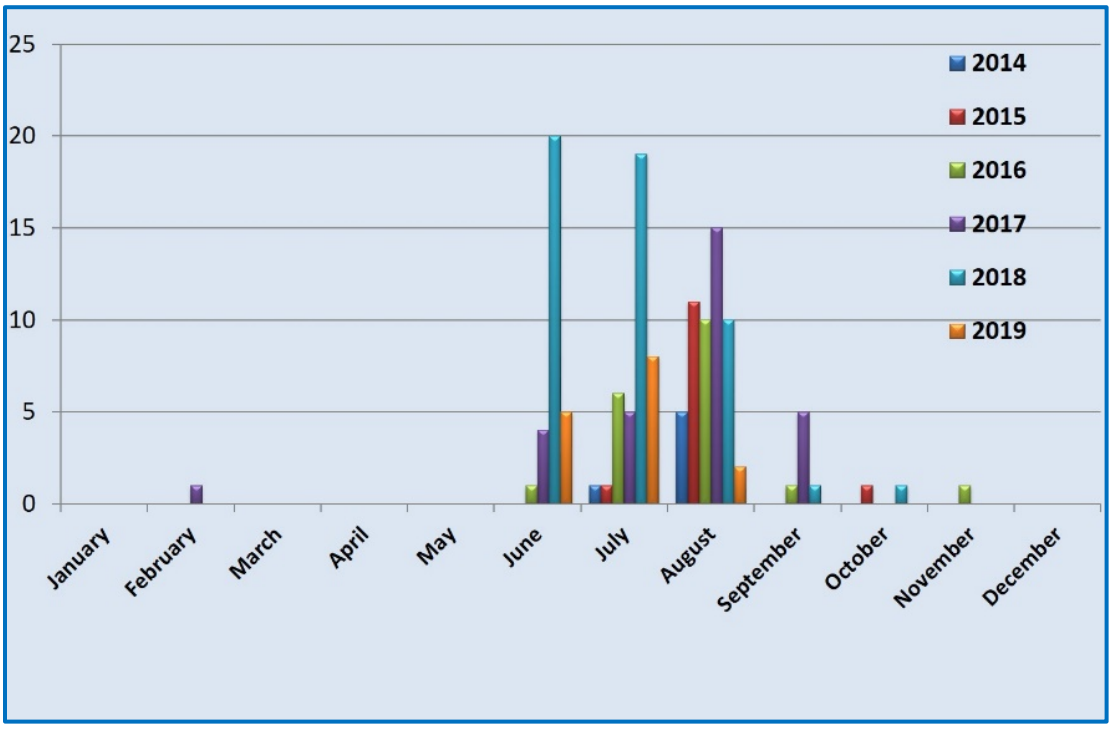


As shown in Table 1, since detection in 2014, the total number of affected CF and NCF is 138 with peak number of affected farms occurring in 2018. Most of the affected swine farms seem to be separate introductions based on the distances between farms and the results of epidemiological investigations. Figure 5 shows an apparent seasonal trend for affected farms during the months of June to September [9].

Table 1: Number of affected farms and depopulated pigs, 2014 – 2019

Type	2014	2015	2016	2017	2018	2019
No. of backyard farms	5	13	19	28	42	16
No. of depopulated backyard animals	6	52	76	110	42	41
No. of commercial farms	1	-	-	2	9	3
No. of depopulated commercial animals	19,217	-	-	24,500	22,704	130

Figure 5: Seasonal trend of ASF cases in swine farms



3 Vaccination

Vaccination against FMD and CSF is prohibited in Lithuania. There has never been vaccination against SVD since the disease has never been reported. Currently, there are no commercially available vaccines for ASF; therefore, vaccination against the disease has never been used in Lithuania [5].

4 Livestock Demographics

Lithuania has an extensive rural economy based primarily on small holdings with multiple animal species. Swine, cattle and small ruminants are distributed throughout the country, mainly on small farms with 1-10 pigs and few cattle. There are few sheep or goats in Lithuania and these are mostly distributed in small numbers on individual farms. Cows are kept for milk production, and beef is produced by fattening bull calves and culling low-producing cows. There are no major marketing or assembly centers for swine in Lithuania; swine are sent directly from the place of origin to the place of destination without passing any animal collection center. There are 16 bovine animal collection centers, 13 bovine traders' premises, and 13 quarantine facilities (for export to third countries) [5-7, 9].

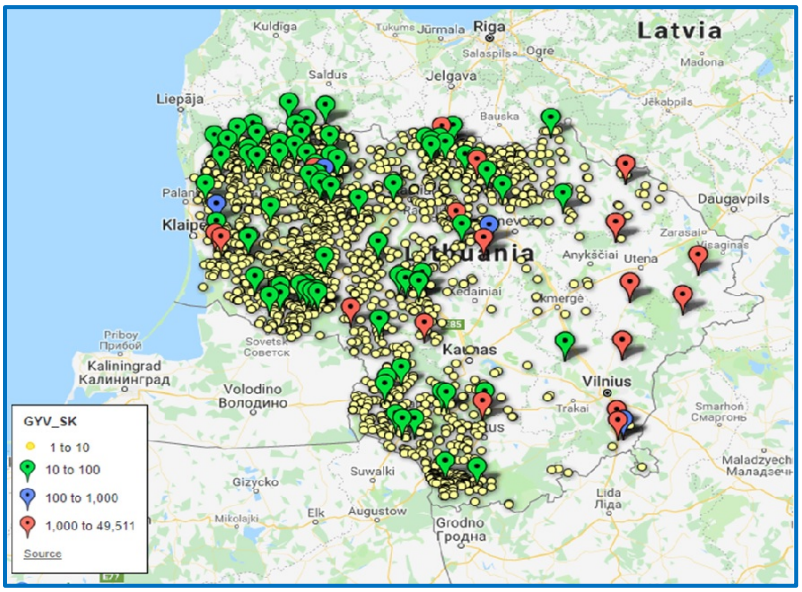
The total number of domestic swine in 2019 was 540,558, slightly decreased than 2018, likely due to ASF outbreaks [9]. There are three main systems for raising swine or producing swine meat and products: Non-commercial farms (NCF), commercial farms (CF), and hunted wild boars (wild boar meat is for personal consumption by hunters) [5, 9].

4.1 Commercial swine farms (CF)

SFVS defines CF as farms that breed swine, sell swine, send swine to a slaughterhouse, and/or move pig products off the holding. CF are classified as follows: a) medium size holdings with 11-100 pigs; b) large holdings with

101-1000; and, c) large holding with more than 1000 pigs [9]. As shown in Figure 6, CF are distributed throughout Lithuania with major and large production farms seem to be concentrated in the eastern and central parts of the country while medium sized CF are concentrated in the north western and western parts. In 2019, the total number of large CF was 22 and the number of medium farms was 271. The total number of pigs raised in CF was approximately 514,000 [6, 9].

Figure 6: Distribution of swine farms by size in Lithuania



4.2 Non-commercial farms (NCF)

Ownership of swine for personal consumption in NCF is quite common in Lithuania. The majority of swine farms in Lithuania are classified as NCF which are basically households that raise 1-10 pigs in their backyard for fattening and personal consumption. NCF are concentrated in the western half of the country (Figure 2). In 2019, the total number of pigs raised on NCF was 26,732 pigs. The total number of NCF was 9,406 in 2019 which represents a significant decline from 13,190 NCF present in 2018 [5, 9]. The APHIS team visited a NCF in the Kaunas region located in Part II restricted area for ASF [6]. The owner began to raise pigs in 2005, but there were no pigs in 2016 and 2017 due to ASF; he repopulated in 2018 and currently has five pigs (~7 months old), bought from ASF free area and 5 milking cows. The DVO stated that the number of NCF in the district has declined from 600 in 2016 to 140 in 2019 [5, 6].

5 Identification and registration

Upon Lithuania's accession to the EU, it became essential and mandatory to implement an integrated animal registration information system ensuring accurate recording of animal holdings, control of infectious diseases, food safety assurance through animal health and welfare control and product origin traceability. SFVS implements its identification program through three main systems [5, 9]:

1. Farm-based registration – all farms or holdings keeping livestock.
2. Individual animal identification – applicable to bovine, ovine, caprine, breeding pigs, and horses, using ear tags, microchips, physical markings, and in the case of cattle, use of bovine passports.
3. Register of Farm Animals (CDB) – national database for the farm registers and identified animals.

5.1 Farm registration

All livestock farms or keeping places including swine and bovines must register their herds in accordance with the following legislations: 1) Directive 2008/71/EC implemented by Order No. 3D-234 of the Minister of Agriculture on registration of farm animals keeping places and identification and registration of kept farmed animals; and, 2) Directive 64/432/EEC on a computerized central database implemented by Order No. B1-349 of the Director of SFVS on the approval of veterinary requirements for trade of bovine animals and pigs [5, 6, 9].

All animal owners are obliged to register their farm with SFVS via the CDB database prior to purchasing pigs and the farm must be inspected by an OV before the registration is completed and approved [5, 9]. The following information must be reported: name and address of the operator concerned; the location of the establishment and description of facilities; and the categories, species and numbers of kept animals or germinal products to be kept, and capacity of the holding. If the owner owns more than one herd, each herd is registered under the owner's code with its own number. In addition, the owner of the animal must keep a pig holding register and inform the SFVS authorities of any changes or any events on their farm such as birth, death, a movement to another keeping place or slaughterhouse, within 7 days of the event. Both buyers and sellers of pigs have to report the event (double notification system). The owner can declare the number of the kept pigs to the CDB every quarter, or twice per year depending on whether he/she receives government financial support [5, 9].

5.2 Individual animal identification

Directive 2008/71/EC requires that all swine must be identified prior to leaving the holding of birth. Breeding swine must be individually identified by an ear tag with the herd number while fattening pigs are individually identified either by an ear tag or a tattoo with the herd number [5, 6]. Only CF owners can order ear tags from SFVS or the CDB office. NCF owners cannot order ear tags for their animals unless they have sows on premises [6]. Lost ear tags don't need to be replaced on NCF because they are considered fattening pigs.

5.3 Register of farm animals (CDB)

The CDB is one of the key registers administered by the State Enterprise Agricultural Information and Rural Business Center (AIRBC) which was established to attain more efficient organization and coordination of the agricultural information system and the system of administration supporting national agriculture [5]. The CDB conforms to EU requirements and has been evaluated and approved by the EC. The main objectives of the CDB are: prevention of infectious animal diseases, control of animal diseases by detecting the source of the disease and contacts with other animals, control of human and animal health and welfare control, keeping records of animal breeding, and providing support to the agricultural sector [5, 9].

The CDB database contains the following information regarding swine herds: holding identification number, address, geographical coordinates with GIS system, herd identification number, name and address of the owner and keeper, type of production, capacity, sanitary information, all reported events, and any additional information deemed necessary by SFVS. Data can be submitted by SFVS' district offices, slaughterhouses, breeding companies, traders in farm animals, companies engaged in carrying farm animals, artificial insemination operators, private veterinarians, marketplaces, fairs, auctions, ear tag suppliers, service suppliers and farm animal keepers. Cross-checks are conducted to automatically detect input errors. All entered information/data are stored throughout the lifetime of the RFA. The CDB has the ability to generate custom reports which can be provided to users electronically or in print format. SFVS officials stated that all NCF are registered in the CDB [5, 6, 9].

5.4 Compliance with identification requirements

SFVS has authority under the traceability regulation to monitor and enforce compliance with identification. Generally, when a noncompliance is detected the official veterinarian must register a noncompliance infraction against the owner of the animals. Official control on animal identification and registration is done by OVs in each district [5, 6]. According to data received from SFVS during the site visit, the percentage of NCF which did not comply with registration and identification in 2019 was 13.3% [6]. However, SFVS stated that this percentage is much lower (estimated at 1%) due to the fact that unregistered NCF are given a chance to register to bring the farm into compliance with the requirements. In addition, SFVS tests all pigs for ASF and other diseases on unregistered farms. SFVS can levy penalties/fines in accordance with the Codex of Administrative Measures for noncompliance with the identification and registration requirements [5, 6, 9].

During the APHIS team visit to the NCF in Kaunas region, the team noticed a discrepancy in the number of pigs recorded in a printout page from the CDB and the number of pigs present on the farm. The team concluded that the owner didn't notify the SFVS office that he slaughtered a pig within 7 days of slaughter as required. SFVS committed to investigate and double check in the CDB [6].

6 Disease detection

6.1 Passive surveillance and reporting

Passive surveillance is conducted through SFVS's nationwide mandatory notification program for reportable diseases. Any animals with clinical signs compatible with any of the diseases under review must be immediately reported to a private veterinarian or to the SFVS' district or regional office. All notification are subject to investigation and emergency response measures in accordance with the Order of the Director of the SFVS No. 497 "Requirements for Notification of Contagious Diseases" which implements Council Directive 82/894/EC and requires notification of the EU and other Member States via the Animal Disease Notification System (ADNS) within 24 hours of (1) confirmation of an outbreak, and (2) removal of restrictions after eradication of the outbreak [5, 6, 9].

As an active member of the OIE, Lithuania has promptly reported all occurrences of all of the diseases under review to the OIE as well as its trading partners [13]. Lithuania has promptly reported all ASF outbreaks as expected. Wildlife species susceptible to the diseases under review are also subject to passive surveillance and notification. Failure to report will result in heavy fines [5, 6]. The number of suspect case investigations for each disease in the past 3 years is shown in Table 2 [9].

Table 2: Number of suspect cases 2016 – 2018

Disease	2016	2017	2018
FMD *	0	1	4
SVD	0	0	0
CSF	0	0	0
ASF (domestic pigs)	25	45	157

SFVS also uses other animal health program activities as opportunities to enhance its passive surveillance and disease detection capabilities such as: during inspections for animal movement controls; export certification; activities related to disease control and eradication programs; slaughterhouse inspections; and response to disease reports [6, 9].

6.2 Active surveillance

SFVS implements both active and passive surveillance strategies for detection of all diseases with the objective of rapidly detecting incursions of foreign animal diseases. Lithuania is considered free of FMD, CSF, and SVD; therefore, surveillance strategies are mainly directed at monitoring its free status rather than demonstrating freedom from these diseases [5]. Surveillance for ASF is discussed below under Section 5.

SFVS conducts targeted active surveillance for CSF in historical regions where disease was previously detected and in regions bordering countries where vaccination against CSF is practiced. The number of active surveillance samples collected and tested for CSF are provided in Table 3; all samples tested negative for CSF [6, 9]:

Table 3: Active surveillance for CSF 2017 – 2019

Type	2017	2018	2019
Domestic swine	572	371	111
Wild boar	679	374	172

For FMD, SFVS conducted active surveillance until 2016. Since 2017, samples are only collected and tested in case of suspicion of the disease. The number of samples collected and tested for FMD are shown in Table 4; all samples tested negative for FMD [9].

Table 4: Number of samples tested for FMD 2016 – 2019 (July)

Year	Cattle	Goats	Pigs	Wild animals	Total
2016	325	176	160	609	1270
2017	6	0	19	1	26
2018	4	2	26	0	32
2019	9	0	2	0	9

Active surveillance for SVD has been conducted from 2004 until 2016; a total of 612 samples were collected from hunted wild boars and 550 samples from domestic pigs have been tested annually. Since 2017 only passive surveillance for SVD has been conducted and as there have been no suspicions and no tests conducted by SFVS. However, in 2017 and 2018, a total of 183 samples were tested for SVD at the initiative of owners. All samples collected for SVD surveillance tested for the disease [5, 6, 9].

6.3 Surveillance for ASF

6.3.1 Domestic swine

All ASF suspect cases are sampled and tested by the Enzyme Linked Immunosorbent Assay (ELISA) and polymerase chain reaction (PCR) tests. All dead sows and boars, pigs that die during transport, pigs showing lesions characteristic to ASF during slaughter are sampled and tested by PCR. Every week, commercial farms must submit samples from at least two last dead pigs older than 60 days for PCR testing (pooled samples can be tested – 5 pigs in one pooled sample) [5, 6, 9, 10]. During active outbreaks, surveillance is designed according to the epidemiological situation on farm. Lastly, pigs that move from a farm located in certain restricted areas are tested (see section 6.4). Table 5 shows the number of samples collected and the number tested positive for ASF in commercial swine during 2016 to 2019 (up to July) [5, 6, 9, 10].

Table 5: Number of samples tested for ASF in commercial swine 2016 – 2019 (July)

Test	2017	2018	2019 up to July
IPT	1246 (7 positive)	3692 (7 positive)	1536 (1 positive)
ELISA	9231 (2 positive)	13753 (3 positive)	2218 (1 positive)
PCR	8917 (184 positive)	12442 (314 positive	4818 (52 positive)

IPT: indirect immune-peroxidase test

6.3.2 Wild boar

All wild boars found dead or killed in road incidents are sampled and tested for ASF. In addition, any hunted wild boar showing any abnormal behavior, and all hunted wild boars in areas where ASF outbreaks have been detected are sampled and tested. In ASF-restricted areas with no outbreaks, sampling of hunted wild boars is carried out to detect ASF at 1 % prevalence at 95% confidence level. In free territories, sampling is carried out to detect ASF at 5 % prevalence with 95% confidence level. Samples are taken by OVs, AV, or hunters. Hunters are trained to take samples and to recognize signs of ASF [5, 6, 9]. The number of samples collected and results of ASF active surveillance in wild boars are shown in Table 6 [9].

Table 6: Active surveillance for ASF in wild boars 2017 – 2019

Test	2017	2018	2019
IPT	2,712 (133 positive)	3,017 (270 positive)	492 (132 positive)
ELISA	13,917 (98 positive)	11,358 (190 positive)	5,665 (117 positive)
PCR	34,021 (2,506 positive)	30,118 (2,131 positive)	11,775 (285 positive)

6.4 Laboratory Support

Diagnostic and confirmatory testing is performed by NFVRAI which is accredited according to standard EN/IEC ISO 17025 applicable to testing and calibration of laboratories, to perform: Chemical, physical and physical-chemical tests, immunoassay tests, microbiological and bacteriological tests, parasitological tests, serological tests, virological tests, pathological anatomical and histological tests, radiological tests, sensory evaluation, molecular biological tests, and detection and quantification of genetically modified organisms [5].

The NFVRAI uses appropriate methods for analysis of samples taken during official controls as provided in legislations. Preference is given to methods published either in international, regional or national standards, or by reputable technical organizations and scientific journals. Laboratory-developed or modified methods are also used in NFVRAI. All testing methods used in NFVRAI are checked and validated before use and are constantly checked and approved by the National Accreditation Bureau. Diagnostic tests used to detect and confirm the disease(s) are shown in Table 7 [5].

Table 7: Diagnostic tests for the hazards

Disease	Methods
FMD	ELISA, virus isolation (VI), Real time PCR (RT-PCR)
SVD	ELISA, RT-PCR
CSF	ELISA, ELISA (Ag specific), VNT, VI, RT-PCR
ASF	ELISA, IPT, Multiplex RT-PCR

7 Disease response

7.1 General

All legislations in Lithuania regarding response and control of ASF in domestic pigs and wild boar are in line with the EC legislations. Certain EC regulations are directly applicable to Member State while other ones are transposed into Lithuanian legislations. As mentioned previously, disease reporting is required in accordance with EU and Lithuanian laws. All animals demonstrating clinical signs suggestive of foreign animal diseases must be immediately reported to SFVS or a private veterinarian [5, 6, 9].

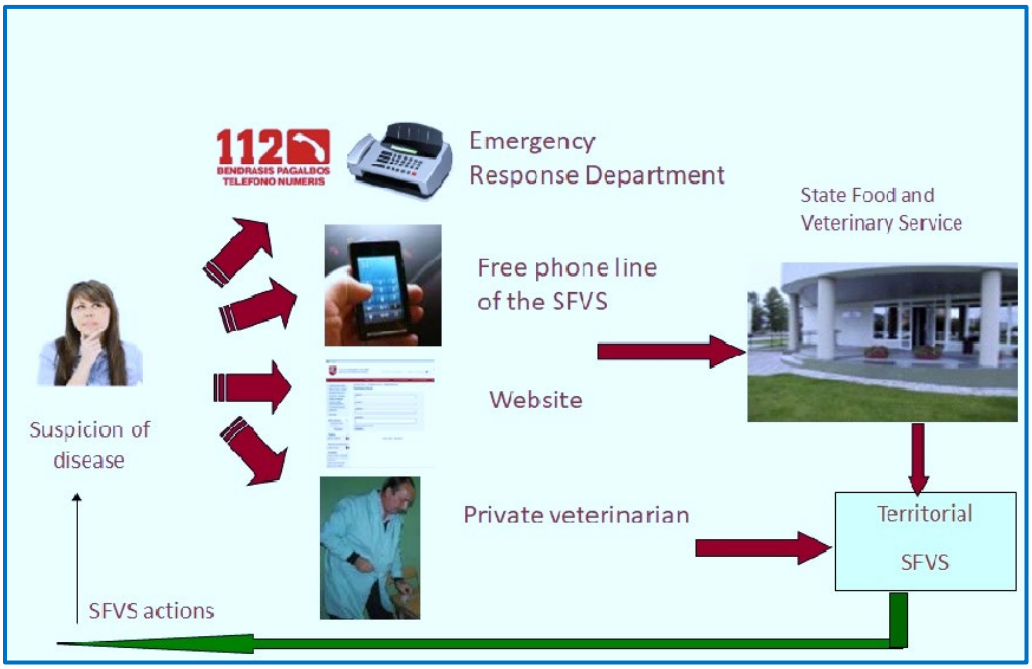
Currently, Lithuania has formal contingency plans for FMD and CSF and a joint plan for ASF and CSF [14-16]. In general, each plan is implemented in a similar way. In general, each plan consists of two stages, suspicion and emergency stages. The suspicion stage is usually brief and includes movement restrictions on establishment(s) where suspect cases have been reported, sampling of animals, implementation of actions specific for suspect cases, etc. The emergency stage starts when the disease is confirmed and includes all response actions such as establishing response zones (protection and surveillance zones), quarantine, depopulation, movement restrictions, surveillance, epidemiological investigation, cleaning and disinfections, OIE and trading partners notification, etc. The emergency stage ends when all quarantines are lifted and the incident is declared over. The following discussion focuses on the ASF/CSF plan [14].

SFVS implement its emergency response via an organizational structure called the Infectious Disease Control Center (IDCC) which is part of the central SFVS. The IDCC consists of several heads of relevant SFVS departments. In addition, each region has an IDCC structure responsible for implementation of response measures as outlined by the central IDCC. The main functions of the IDCC are to:

- Assess the situation to determine the scope of control measures;
- Introduce regionalization measures and organize, coordinate control and eradication measures;
- Conduct epizootic and clinical examinations, sampling, and assessment of laboratory results;
- Coordinate the management and use of financial resources for eradication measures;
- Coordinate sample submission and testing with NFVRAI and other laboratories;
- Liaise with relevant authorities of other countries and international organizations;
- Provide information to the Lithuanian Ministry of Health of the Republic of Lithuania, the Ministry of Agriculture of the Republic of Lithuania, and other interested institutions, organizations and bodies about the suspicion and confirmation of ASF and the control measures thereof;
- Communicate information to the EC, EU Member States' veterinary services, the OIE, and trading partners regarding suspicion, confirmation, and control and eradication measures.

Suspect cases are investigated immediately and any movement of animals, feed, and means of transport into a holding or out is prohibited until results of laboratory results are received and the presence of the disease is either confirmed or ruled out. SFVS will also assign an officer to supervise movement of animals in the CDB. The IDCC notifies the suspicion/confirmation to the EC and other Member States via the ADNS within 24 hours. Figure 7 shows the flow of information during the period of disease suspicion for ASF.

Figure 7: Information flow during suspicion of animal disease



Emergency response simulations and field exercises are conducted at least one per year – e.g., CSF and ASF in 2017 and the international training on FMD and lumpy skin disease in 2018. SFVS stated that a real time training on ASF is planned; however, up to the time of the site visit, it has not been carried out [5, 9].

Upon confirmation of ASF, control measures in accordance with Council Directive 2002/60/EC are implemented. A 3-km protection and 10-km surveillance zones are established and SFVS conducts inspections and a census of all pig keepers in the two zones. Low risk commodities may be traded under certain additional risk mitigations and enhanced surveillance inside and outside the infected region is conducted as mentioned above [5, 6, 9].

The regional IDCC establishes working groups to coordinate and implement control and eradication measures as follow[14]:

- Emergency Measures and Information Management Group: responsible for introducing and supervising implementation of emergency measures in the protection, surveillance and buffer zones; analysis of information and communication/dissemination of information; draft official orders in relation to measures; and fiscal management of the outbreak.
- Emergency Measures Group: conducts emergency measures in the protection and surveillance zones, and keeps records; provides information to other groups; and performs capture of pigs, depopulation, and safe handling/disposal of dead animals, manure, litter, feed and other materials; and perform cleaning and disinfection of facilities, equipment, environment, means of transport and work equipment.
- Epizootic Examination Group: conducts epizootic examination and submits data on the emergency measures applied in other animal holdings within the perimeter of the protection, surveillance and buffer zones; determines the deadlines of the imposed emergency measures; conducts clinical animal examination; collects samples and delivers them to the laboratory; and keeps records of work carried out and submits information to other groups.

- Cleansing and Disinfection Group: ensures storage and proper use of disinfectants and other tools; conducts cleaning and disinfection of the environment, facilities, equipment, means of transport and work equipment; safely decontaminate feed, bedding, manure and other materials; keeps records of work carried out; and submit information to the Emergency Measures and Information Management Group and other work groups.
- Staff Support Group: provides working groups with the material welfare, catering and living conditions; provides first aid, health protection of employees; and submits information to other groups.

7.2 ASF response measures

Specific response measures applied after confirmation of ASF include [5, 6, 9, 10]:

1. All swine in the infected holding are depopulated immediately in such a way as to avoid the risk of spreading the virus during transport and killing. Captive bolt pistols are most frequently used to stun animals. Medicinal injections (e.g. barbiturates) may be used afterwards. In case of emergency, rifles may be used to kill animals with SFVS permission and by assigned persons who would ensure safety. Electric tongs and CO2 may be also used. SFVS provides special depopulation and work safety to individuals performing these activities.
2. Sufficient numbers of samples are randomly taken from the pigs to attempt to determine the source of the virus and the time elapsed from the virus entering the holding until it was confirmed as follows:
   a) The minimum number of samples must allow for the detection of 10% prevalence with 95% confidence;
   b) The number of samples for virological testing must take into account the range of tests that may be performed, the sensitivity of the laboratory tests that will be used and the epidemiological situation; and,
   c) Appropriate collection of soft ticks in areas where infected vectors have previously been demonstrated.
3. In case of a primary outbreak, the type of the virus is identified. In case of secondary outbreaks, the competent authority may decide to derogate from points 1 and 2 above and establish other sampling procedures that takes into account the epidemiological situation.
4. An epidemiological investigation is launched to identify the possible sources and means of introduction of the virus, the time lapse between introduction till confirmation, and potential for spread beyond the infected holding, and movement of persons, vehicles, pigs, carcases, semen, meat or any material which could have carried the virus to or from the holdings.
5. Meat of pigs slaughtered during the period between the probable introduction of ASF into the holding and start of official measures must be traced and processed. Similarly, semen, ova or embryos collected from the holding during the same period are traced and destroyed.
6. Carcass disposal must be carried out in such a way as to prevent spread of the virus, taking into account risks of groundwater contamination (burial), spread of fires (burning on location), etc. If possible, carcasses may be transported to specific disposal sites using designated means of transportation, taking into account the distances between the location of the disease outbreak and the disposal methods. Transport is allowed only after an assessment of the risk of transporting materials contaminated with the virus from the location of the disease outbreak.
7. Carcasses are transported in covered, sealed trucks which are disinfected prior to or after loading and immediately following the transport. SFVS must collect samples to determine the efficacy of disinfection. Trucks are allowed to leave the holding provided a thorough inspection is carried out and

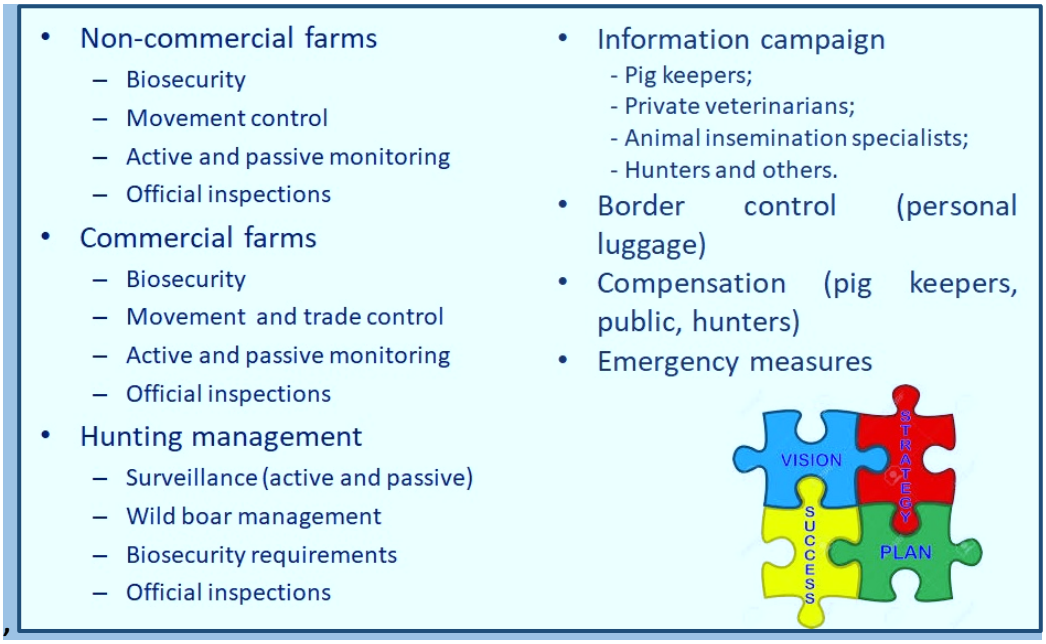
leakage is prevented. All disposal trucks entering or leaving the infected farm are registered in a logbook of the holding.

8. Person(s) in charge of disposal operations are assigned by the district SFVS office and is/are on call on a constant basis to control all disposal activities, control and registration of incoming and outgoing disposal items, and disinfection operations. A cleansing and disinfection plan must be approved by the district SFVS office.
9. Once depopulation is complete, all materials and waste likely to be contaminated such as feeding stuffs, bedding, manure and slurry collected during depopulation must be processed to ensure the destruction of the ASF virus. All buildings used for housing the pigs, vehicles used for transport of carcasses, and equipment, likely to be contaminated are cleaned and disinfected.
10. In cases where an outbreak has been confirmed in a laboratory, a zoo, a wild life park or a fenced area where pigs are kept for scientific purposes or purposes related to conservation of species or conservation of rare breeds, the SFVS may decide to derogate from certain measures. SFVS shall immediately notify the EU Commission of such a decision.

8 ASF control

In 2014, the EU adopted prevention and control strategies to be applied when ASF is suspected or confirmed either in holdings or in wild boars which are designed to prevent the spread of ASF and to eradicate it from affected regions (Council Directive 2002/60/EC) [17]. As shown in Figure 8, Lithuania follows specific strategies for ASF control which include criteria for geographically defining ASF regions; enhanced biosecurity measures; active and passive surveillance; movement controls; wild boar management; education and outreach campaigns; and import and export controls [9].

Figure 8: Strategy for ASF control



8.1 Regionalization for ASF

Regionalization is applied in Lithuania as set up based on Commission Decision 2014/709/EU to ensure the best possible disease control strategies to minimize the negative impact of ASF outbreaks on the EU single market

(intra-EU trade) and on exports to third countries without lowering the level of safety of the commodities that are exported [17, 18]. The criteria for establishing ASF regions are harmonized across the EU and tailored to the Member States, taking into account local factors such as domestic swine and wild boar demographics and are amended as the epidemiologic situation changes. Commission Decision 2014/709/EU specifies clearly defined roles for the EC and Member States, with emphasis on urgent adoption of emergency response measures and rapid flow of information [18].

Restricted areas are implemented in consultation with the EC and they are listed by groups (Parts I – IV) based on the epidemiological situation of ASF in the region and the defined level of risk in the Annex as follows [18]:

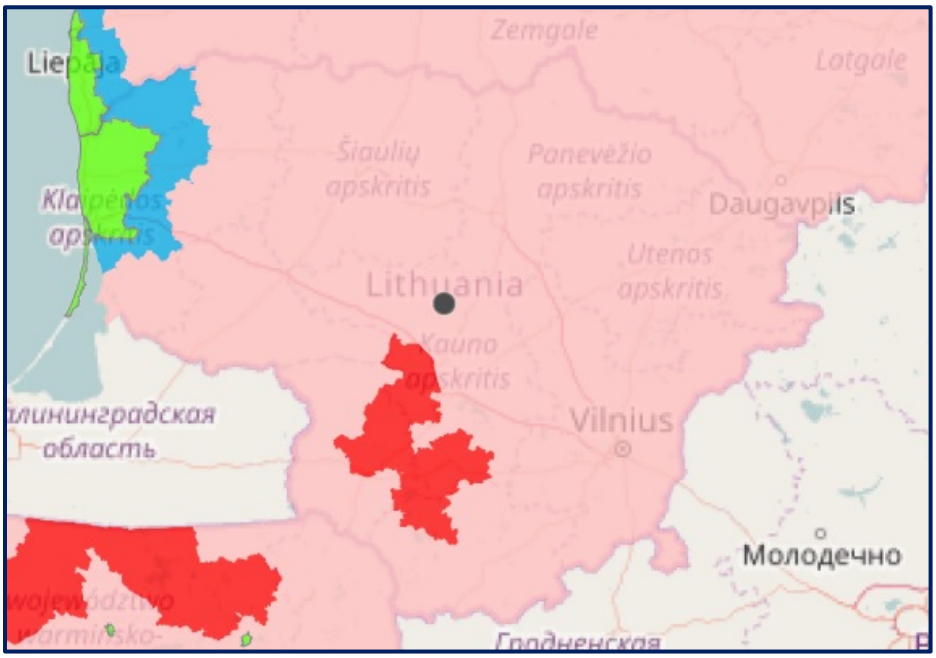
(1) Part I – no disease and higher risk due to proximity with ASF infection;
(2) Part II – presence of ASF only in wild boar;
(3) Part III – presence of ASF in domestic pigs and wild boar; and,
(4) Part IV – long standing persistence of ASF in pigs and wild boar.

However, the classification of Member States' territories or parts thereof as Parts I, II, III and IV according to the swine population concerned may need to be adapted by taking into account additional risk factors due to the local epidemiological situation and its evolution, especially in newly infected areas where less information is available about the disease epidemiology under different ecological systems. Larger areas can be restricted based on administrative and/or geographical borders [9]. Decisions are published in the Official Journal of the European Union in 23 languages.

The whole ASF regionalization system will only work if the overall EU management of animal diseases (identification and traceability, movement certification and checks, disease reporting, compensation mechanism, etc.) is implemented. The cornerstone of the system is the origin of the pigs and the set of measures applied in the holdings of origin, built around whether adequate risk mitigating measures can be implemented while at the same time allowing derogations to trade/movement prohibitions specific to the restricted Part (I, II, III, or IV) [5, 6, 9].

Figure 9 shows that as of November 25, 2019, most of Lithuania has been regionalized as Part II (pink) with presence of one Part III area (red) in the south and a Part I (blue) and free (green) areas in the west [12].

Figure 9: ASF restricted regions in Lithuania



8.2 Biosecurity

SFVS has enforced strict biosecurity requirements for pig holdings since 2011 [5]. All swine farms (CF and NCF) are required to meet minimum biosecurity requirements in accordance with Order No. B1-384, which lists measures intended for protection against introduction of infectious diseases, and the responsibilities of animal owners, keepers, and persons who work in or visit the farms [5, 9, 19]. The main objectives of the biosecurity requirements are to mitigate risk of introduction of pathogens of infectious diseases related to: introduction of new animals; farm staff and visitors; transport vehicles; sourcing of feed and water; use of farm equipment; contact with wild boars; dead pigs, byproducts, and waste; poor disinfection; and, pests such as rodents, insects, etc. [19].

Minimum biosecurity requirements for NCF include: report all suspicions of a transmissible disease; introduce healthy pigs sourced solely from registered farms with appropriate movement documents; fully comply with prohibition of feeding pigs with food waste and food of animal origin; have fencing around holding areas; and use of disinfectant mats when entering/leaving pig holding [9, 19]. All CF must meet the requirements for NCF and, additionally has to: register all visitors; designate a person responsible for biosecurity measures; prepare and implement biosecurity plan based on risk factors; prepare a farm contingency plan and approved by the DVO; holding places must be separated from all other areas; control access by persons and transport; clean and disinfect all transport vehicles entering the farm; and designate specific areas for entrance of visitors and workers where they can change clothes, shoes and shower before entering or leaving the farm [9, 19].

SFVS conducts farm inspections to monitor compliance with biosecurity compliance using a standard checklist/form. Until mid-2018, NCF were inspected by either an OV or an AV; however, currently, all NCF are inspected by an OV at least once per year. More frequent inspections might be scheduled or unannounced depending on disease situation in the region and the compliance history of the holding. Following the third noncompliance, SFVS can order depopulation of pigs and closure of the farm [5, 6, 9]. All CF are inspected by an OV at least twice per year. At the time of the site visit, SFVS stated that all CF and NCF were inspected for the purpose of biosecurity monitoring. The site visit team verified this information during the site visit [6].

The APHIS team visited a commercial swine farm in the city of Ignalina [6]. The farm manager confirmed that SFVS visits the farm at least twice per year. Biosecurity measures used include limited access for vehicle and people, 24/7 security, ID cards for employees, change of shoes and hands disinfection, truck disinfection before entry to the farm, triple fence which is buried 30 cm below the ground, pest control program, no outside food allowed (company provides food to employees), people are not allowed to shake hands, employees are not allowed to keep pigs at home, shower in and shower out etc. The company uses its own trucks to move animals, feed, supplies, equipment, etc., and animal pick-up trucks are not allowed to enter the farm. There is a separate internal trailer that carries pigs to the live-haul truck parked outside the fence; followed by cleaning and disinfection of the trailer. The same procedure is applied when disposing of dead pigs. The company also inspects their worker's homes once per quarter to verify that they don't keep pigs at home [6].

During the visit to the NCF in Kaunas region, the site visit team was requested to sanitize hands and wear shoe covers before they were allowed to enter the premises [6]. The owner follows the biosecurity measures as required by SFVS such as: use of special clothing, boots, and disinfectant mats at the entry of the pig house and limiting the number of visitors to the household and the pig house. The owner informed the team that an OV visited the farm at least once per year, and sometimes 2-3 times per year. During these visits, the OV checks all biosecurity related items such as disinfectant mats, fencing, doors, locks, etc. The owner confirmed that he does not feed his pigs with food waste because it is risky and prohibited, nor feed them fresh grass or fresh grain. In addition, he slaughters pigs at the farm for personal consumption, and no pigs are sent to the slaughter

plant. The team reviewed farm biosecurity inspection and movement records and confirmed the owner's statements.

8.3 Movement controls and derogations

As mentioned previously, when pigs move from one farm to another, each pig must be identified by an eartag with the herd number in one ear. In case the pigs move directly to the slaughterhouse, they can be identified by a tattoo of the herd number on the hind leg. For domestic movement to another farm or slaughterhouse, a local health certificate must be issued by an OV or AV. If restrictions are applied on the farm or area because of ASF, the health certificate can only be issued by an OV [5, 6, 9].

All information regarding movement of pigs must be reported to the CDB within 7 days by both sellers and buyers (double notification). A standard notification form is used to declare movements of animals. Domestic livestock must be accompanied by a health certificate issued by an OV or AV when moved to another farm or slaughterhouse in free areas. There is no requirement to keep records of transport documents; however, the movement of animals must be recorded in the farm register as well as notified to the CDB. Movement data are recorded in the database at the moment of their first declaration even if the other part of the movement is not transmitted to the database [5, 6].

8.3.1 Part I

Movements of pigs from holdings located within the borders of a Part I area to the rest of the Lithuanian territory can occur following clinical examination of pigs by an OV within 24 hours before the movement and the issuance of a health certificate by the OV confirming that no pigs show ASF signs [5, 6, 9, 20].

8.3.2 Part II

1. Movements of pigs from holdings within the area directly to another holding or the slaughterhouse in the same area can occur only when authorized by the DVO, clinical examination of pigs by an OV within 24 hours before the movement, and issuance of a health certificate by the OV confirming that no pigs show ASF signs.
2. Movements of pigs from holdings out of the area to the rest of the Lithuanian territory may occur under the following conditions:
   a) Pigs must have resided in the holding at least 30 days prior to movement or since birth, and no pigs from Part II or Part III area have been introduced for at least 30 days prior to movement;
   b) Laboratory testing has been carried out 15 days prior to movement with negative ASF results;
   c) Clinical examination of pigs by an OV within 24 hours before the movement; and,
   d) Issuance of health certificate by OV confirming that the pigs do not show ASF signs [5, 20].

8.3.3 Part III

1. Movements from holdings within the area directly to another holding or a slaughterhouse can occur only when authorized by the DVO, clinical examination of pigs by an OV within 24 hours before the movement and issuance of a health certificate by the OV confirming that no pigs show ASF signs.
2. Movement from a holding located in Part III area to a place located in Part II area:
   a) The pigs originate from a holding which meets all biosecurity requirements;
   b) The pigs must have resided in the holding at least 30 days prior to movement or since birth;
   c) Laboratory testing has been carried out 15 days prior to movement with negative ASF results;
   d) Clinical examination of pigs by an OV within 24 hours before the movement;
   e) Issuance of health certificate by OV confirming that the pigs do not show ASF signs;

f) Exchange of information about the movement (number of animals, health certificates, transport route, etc.) between the DVOs in areas of origin and destination; and,
g) Cleaning and disinfection of the means of transport immediately after unloading.

3. ASF movement restrictions are particularly stringent for Part III restricted areas which may lead to logistic and animal welfare problems in case there are no slaughterhouses available in the respective area or there are limitations on slaughtering capacity. SFVS considers that movement of live pigs for immediate slaughter poses less risk than other types of movements of live pigs provided that risk mitigation measures are in place. When such circumstances occur, exceptional derogations may be granted for the dispatch of live pigs from holdings in Part III areas for immediate slaughter at a slaughterhouse specifically designated by the CVO for that purpose and the CVO must inform the EC about the designated slaughterhouse. The following requirements must be met:
   a) Pigs must have resided in the holding at least 30 days prior to movement or since birth, and no pigs from Part II or Part III areas have been introduced for at least 30 days prior to movement;
   b) Laboratory testing have been carried out 15 days prior to movement with negative ASF results;
   c) Clinical examination of pigs by an OV within than 24 hours before the movement; and,
   d) Issuance of health certificate by OV confirming that the pigs do not show ASF signs.
   e) Transport requirements:
      (i) Pigs are transported directly, without stops or unloading to the designated slaughterhouse on a designated and sealed means of transport;
      (ii) If the pigs are transported outside the surveillance zone, transport must only occur following designated transport routes;
      (iii) Vehicles must be cleaned and disinfected immediately after unloading; and,
      (iv) The DVO responsible for the location of the slaughterhouse must be informed of the planned date of arrival of pigs and he/she must send confirmation of arrival at the slaughterhouse to the DVO at the place of departure.

Verification of compliance with movement requirements is carried out by OVs. In addition, when moved to the slaughterhouse, the animals and documentation must be checked by an AV stationed at the slaughterhouse. In case of noncompliance, penalties are applied in accordance with the Code of Administrative Measures [6, 9]. The APHIS site visit team confirmed that movement requirements are implemented appropriately at the visited CF and NCF [6].

8.4 Lifting of restrictions and repopulation

Restrictions on protection and surveillance zones can only be lifted after cleaning, disinfection, and insect and pest control of all affected holdings have been conducted. These activities must be followed by clinical examination and laboratory testing of pigs in all holdings carried out after 45 days in the protection zone and 40 days in the surveillance zone from completion of preliminary cleansing, disinfection and, insect and pest control on the infected holdings [5, 6, 9].

Certain conditions apply for lifting of restricted areas (Parts I – IV) [5, 9]:

- Part 1: based on full consideration of the risks based on the whole set of epidemiological data in a wider geographical and temporal context.
- Lifting Part II regionalization and reverting to Part I: no ASF cases in wild boar in the past 12 months. Reduction of the 12 months period might be allowed in specific situations depending on the overall epidemiological situation of ASF of the country and justifications provided by relevant veterinary authority.

- Lifting Part III regionalization and reverting to Part II or Part I [5, 9]:
    (a) there have been no ASF outbreaks in domestic pigs during the past 12 months or,
    (b) in case of total depopulation of all non-commercial farms with low biosecurity conditions, the period without any outbreaks can be reduced to 3 months or,
    (c) in case of outbreak (in an area with no ASF outbreaks in domestic pigs for the past 12 months) – 3 months after the disinfection of infected holdings (in accordance with Article 10.4 (a) of Directive 2002/60/EC) and provided that measures referred in Article 10.4 (b) (clinical and laboratory examinations) or in Article 10.5 (intensive sampling and testing program of Directive 2002/60/EC are implemented,
    (d) in the event of limited outbreaks of ASF clustered in space and in time (during a period of 30 days from the first outbreak) in non-commercial pig holdings in a sufficiently large and previously free area – 3 months after the disinfection of last infected holding (in accordance with Article 10.4 (a) of Directive 2002/60/EC) and provided that measures referred in Article 10.4 (b) (clinical and laboratory examinations) or in Article 10.5 (intensive sampling and testing program of Directive 2002/60/EC have been implemented. In addition, an overall epidemiological situation of ASF of the country and justifications provided by the relevant veterinary authority should be taken into account.

Prior to repopulation, both CF and NCF must fulfill all of the required biosecurity measures. The farmer must send an official repopulation request to the district SFVS office and an OV is sent to the farm to inspect the farm. If the inspection is satisfactory, SFVS will give the permission to repopulate. SFVS pays the cost of purchasing new animals provided that the farmer agrees to raise other livestock species; the farmer must sign an agreement not to raise swine to receive the incentive [9].

8.5 Hunting management

Hunting is a regulated sport in Lithuania and all hunters must be licensed and become members of a hunting club to participate. In Lithuania, all wildlife belong to the Republic which only rents out the rights for hunting. However, hunting grounds belong to private citizens who can choose to rent these grounds to hunting clubs usually for a period of 10 years, or choose not to allow hunting on their property. There are a total of 931 hunting grounds in Lithuania; all of which have been inspected by an OV prior to the hunting season [9]. Hunting club membership fees may vary from €2,000 to €10,000. In addition to the membership fee, there is annual renewal fee that varies from €250 TO €2000 [5, 9]. There is a total of 30,000 permitted hunters; of which only 20,000 hunters are active. Hunting is allowed all year long and the meat from hunted wild boars is used only for personal consumption; sale of meat privately or placing on the market is prohibited [6].

Prior to ASF detection in 2014, SFVS officials issued hunting permits to hunting clubs for a single hunting season (May to May). However, since January 2019, hunting clubs are inspected by SFVS officials once per year and as long as biosecurity and other requirements are met, SFVS will issue a permanent permit. The new rules allow SFVS to conduct unannounced/unplanned inspections if deemed necessary. In addition, the rules allowed use of closed dressing areas which was not previously allowed. Installation of pits for storing offal is now obligatory for all hunting grounds; it's up to hunters to decide which type of dressing area (open or closed) they use based mainly on the culture of hunters in that area [6, 9].

Each hunter in restricted or at risk areas is well trained in recognizing clinical sign of ASF in wild boar, even hunted ones; the kind of samples to take and how to take them; notification of suspicion; and biosecurity and hunting hygiene. Training is carried out by OVs from SFVS district offices. Every member of the club must go through a theoretical and practical training once per year [6].

SFVS coordinates with hunter associations to invite hunters to discuss future strategies for ASF control in the wild boar population and to provide updates on biosecurity during, before and after hunting, management of the wild boar population during hunts, and collection and destruction of hunted and dead wild boars that test positive for ASF. Strategies to manage the population of wild boars include: 1) selective hunting of adult females; 2) total ban on feeding wild boars; 3) active patrolling to find and destroy carcasses; 4) passive and active surveillance; 5) biosecurity in hunting clubs; 6) financial incentives; and, 7) continuous awareness campaigns. To motivate hunters, SFVS pays hunters €100 for hunting a female older than 24 month and pays €30 to the hunting club for finding dead carcasses and €30 for disposal of each wild boar carcass (to the hunting club) [6, 9].

The APHIS team visited a wild boar hunting ground in Kaišiadorys and reviewed inspection reports, hunting records, and training records [6]. In this district, there are a total of 15 hunting grounds. SFVS had 68 meetings attended by more than 2,000 participants (hunters, farmers, private vets etc.) in 2018. A total of 13 unplanned inspections where carried out in 2018; none so far in 2019 at the time of the visit. Unplanned inspections are usually done during drive hunt season (starting in October).

The last planned inspection at this hunting ground was in May of 2019. There are two open dressing areas, and 1 offal concrete storage pit which is fenced-in and kept locked. The hunt organizer is responsible for all activities – dressing, sampling, storage etc. and must ensure that all activities are carried out in accordance with the requirements. The manager of this hunting ground estimated that there are 40-45 wild boars on this hunting ground. Only 3 wild boars were hunted so far [6].

Dead carcasses are transported to the dressing facility in large, extra strong black plastic bags. Each carcass must be logged in the hunting club register and dressing procedures cannot start until the animal is logged (requirement of the Ministry of Environment). Once logged in the register, the carcass is delivered to the dressing area for dressing and sample collection. ASF samples are taken by hunters – two tubes of blood, LNs, kidneys, spleen, diaphragm for trichinella testing etc., and the offal are placed in a concrete pit (at least 3 meter deep) using a leak proof plastic tub. When the pit is full, SFVS will issue a permit for emptying and transfer to an authorized rendering facility [6].

Dressed carcasses are kept in a cold room on-site until lab results are back usually within 2-5 days. The SFVS district office will inform the hunting ground of the results; none of the hunted boars in this hunting ground tested positive for ASF in 2019. However, hunters belonging to this club found 3 dead carcasses that tested positive for the disease. The APHIS team identified two non-compliances related to biosecurity, the offal pit was unlocked at the time of inspection and there was an unidentified carcass in the cold room [6].

8.6 Training and outreach

Veterinarians from central SFVS offices train official veterinarians in various fields of competence, e.g. animal disease surveillance programs, biosecurity rules, ASF controls, etc. and on any new legislation. These trainings are performed at least once per year. SFVS conducts frequent and periodic training sessions to district OVs, owners (both CF and NCF), hunters, private veterinarians, animal owners, and other industry members on the epidemiological situation in Lithuania, EU and third countries' requirements/restrictions, disease surveillance and control measures, early warning system, and biosecurity measures. Training sessions are conducted by the OVs from the regional offices as well as from the district offices and the emergency response department [5]. Training sessions are tailored to the audience, e.g. hunters are trained about ASF in boars and pigs, biosecurity rules to be applied during hunting and skinning of animals. Owners are trained on biosecurity rules, recognition of ASF clinical signs, and if they keep pigs for commercial purposes, on trading restrictions and requirements [5, 6, 9].

Outreach campaigns are ongoing and include distribution of pamphlets, brochures, calendars, etc. with ASF information and are distributed via the internet, TV, radio, newspapers, and delivery of special leaflets during inspections of farms by OVs [5, 9]. SFVS sends SMS text messages to inform farmers about new ASF cases and obligation to declare pigs. Road signs are posted in more than 100 places to provide information to the public about ASF virus spreading with food waste. In addition, SFVS conducted about 500 outreach meetings with farmers in 2019 [9, 10].

9 Import controls

Lithuania borders Latvia to the north, Belarus to the east and southeast, Poland to the south, the Kaliningrad region of Russia to the southwest, and the Baltic Sea to the west. APHIS does not recognize Belarus or the Kaliningrad region as free of any of the diseases under review. APHIS recognizes Poland and Latvia as free of FMD and SVD, and as low risk for CSF. ASF is present in Latvia and Poland [5].

9.1 Third countries

Live animals, meat, meat products, and genetic materials are harmonized commodities under EC legislations, which means that the requirements for importation from third countries are standardized across all Member States [21, 22]. EC certification requirements for import of live animals and animal products from third countries are generally comprehensive with respect to OIE guidelines and must be signed by an OV of the country of origin. The specific certificate used depends on the commodity for export, the exporting country, the disease status in the exporting country, and, in the case of live animals, the purpose for which they are exported (breeding, production, or direct slaughter).

Commission regulation (EU) No 206/2010 of 12 March 2010 lists third countries from which live animals and their fresh meat may be imported into the EU and for which there is a model veterinary certificate specifying the certification requirements. The OV of the third country must certify and confirm that the animal conditions and tests provided for in the relevant health template have been met. EC legislations pertinent to model certificates and other EC legislations pertinent to the importation of live swine, genetics, fresh meat, and animal products are listed below in Figure 10 [21, 22].

Figure 10: Additional EC legislations governing imports of animal commodities

Commodity	EC legislation	Description
Live animals	Council Directive 91/496/EEC	Principles governing the organization of veterinary checks on animals entering the EU from third countries
	Council Directive 92/65/EEC	Requirements for trade in and imports into the EU of animals, semen, ova and embryos not subject to health requirements
	Council Directive 2004/68/EC	Rules for the importation into and transit through the EU of certain live ungulate animals
	Council Regulation (EC) 1/2005	Requirements for protection of animals during transport
	Commission Decision 2011/630/EU	Specifies certification requirements and lists third countries from which bovine semen is allowed
Genetics	Council Directive 88/407/EEC	Specifies requirements for approval by the EC of bovine semen collection centers
	Commission Decision 2006/168/EC	Specifies certification requirements for imports of bovine embryos and specifies list of allowed third countries
	Council Directive 90/429/EEC	Specifies requirements for intra-Union trade in and imports of porcine semen and approval of semen collection centers
	Commission Decision 2012/137/EU	Lists third countries allowed to export porcine semen to EU
	Commission Decision 2008/636/EC	List of third countries authorized for imports of porcine ova and embryos into the EU
Products	Council Directive 97/78/EC	Principles governing organization of veterinary checks on products entering the Community from third countries
	Commission Decision 2007/777/EC	Conditions and certification for imports of certain meat products and treated stomachs, bladders and intestines
	Commission Decision 2000/572/EC	Health conditions and certification for imports of minced meat and meat preparations
	Council Directive 2002/99/EC	Rules for production, processing, distribution and introduction of products of animal origin for human consumption
	Commission Decision 2003/779/EC	Requirements for importation of animal casings
	Commission Implementing Regulation 2016/759/EU	Requirements for gelatin, collagen and raw materials for production of gelatin and collagen
	Regulation (EC) No 882/2004	Official controls to ensure verification of compliance with feed and food law, animal health and animal welfare rules
	Regulation (EC) No 1069/2009	Specifies health rules as regards animal by-products and derived products not intended for human consumption

9.2 Control of intra-Community trade

9.2.1 General requirements

Trade in live animals and animal products within the EU is primarily governed by a series of Council Directives that were transposed into Lithuanian legislations. As an EU Member State, Lithuania is free to engage in intra-Community trade with any other Member State as governed by the transposed Directives. All live animals and animal products, including semen and embryos, must be accompanied by the appropriate certificate as specified in EC legislations. The EC emphasizes traceability as a key component of animal health control. Hence, animals must be appropriately identified to ensure that when animals are presented for dispatch to another Member State; they can be subsequently accounted for on arrival at the place of destination [5, 9].

The animal health requirements for intra-Community trade in live swine are laid down in Council Directive 64/432/EC which harmonizes the rules for pigs to ensure that the same requirements are applied for trade among all Member States thereby ensuring the safe and free circulation of animals in the European Union territory. In addition there are rules regarding the health status in relation to animal diseases (e.g. CSF, ASF,

and SVD). Prior to intra-Union trade, an official veterinarian certifies the health certificate and supervises the loading and unloading of animals for welfare reasons. The shipment is entered into the Trade Control and Expert System (TRACES) and the server informs the point of destination as well as any border crossing points and an OV at the point of destination confirms its arrival [23]. Council Directive 90/425/EEC allows for spot checks to be carried out at the point of origin and the destination to ensure that consignments are in compliance with conditions in the health certificates [5, 6, 9].

Slaughterhouses, meat cutting plants, cold storage units, milk processing plants, and semen collection centers must be approved by the Member State in which they reside according to criteria equivalent to those for exporting establishments in third countries. The veterinary services of the pertinent Member State and the EC's Food and Veterinary Office conduct periodic audits to monitor compliance with approval criteria and certification requirements [5, 6, 8].

9.2.2 Requirements specific for ASF

Lithuania, as well as other EU MSs, prohibits imports of live swine, fresh meat, and swine products from third countries affected with ASF. Processed products may be imported if subjected to a treatment that ensures the destruction of the ASF virus [5, 6, 9].

In general, intra-Community trade in live swine, swine genetics, fresh pork and pork products is prohibited from ASF-restricted areas listed in the Annex to Commission Implementing Decision 2014/709/EU (as last amended). However, certain derogations to this prohibition are allowed for shipping live swine, swine genetics, fresh pork and processed products from ASF-restricted areas in an affected MS under certain conditions. The main derogations for intra-Community trade are [18]:

1. MSs may authorize dispatch of live pigs from a holding located in the areas listed in Part I of the Annex to other MSs provided that those live pigs comply with the following conditions:
   a) animals have continuously resided on the holding for at least 30 days prior to date of dispatch or since birth, and no live pigs were introduced into that holding from restricted areas for at least 30 days prior to date of dispatch;
   b) animals come from a holding which implements bio-security requirements for ASF as established by the competent authority and ensures that at least the first two dead pigs over the age of 60 days in each production unit each week have been subjected to a test for ASF;
   c) animals have been subjected to test for ASF with negative results within a period of 7 days prior to the date of the movement and clinically by an official veterinarian within the 24-hour period prior to the movement of the live pigs; or,
   d) animals come from a holding subjected at least twice a year, with an interval of at least 4 months, to inspections by the competent veterinary authority, which:
      (i) followed the guidelines and procedures for sampling and checking;
      (ii) included a clinical examination of the pigs in the holding in accordance with the checking and sampling procedures;
      (iii) checked the effective application of the measures provided for in the second indent and in the fourth to seventh indents of Article 15(2)(b) of Directive 2002/60/EC.
2. Dispatch of pigs from holdings in a Part II area to a Part II or III area in another MS may occur under the following requirements:
   e) pigs have been uninterruptedly resident on the holding for a period of at least 30 days prior to the date of the dispatch or since birth and no live pigs have been introduced into that holding from Part II, III and IV areas during a period of at least 30 days prior to the date of the dispatch;

f) Laboratory testing for the presence of ASF virus genetic material conducted – 7 days prior to the date of the dispatch with negative ASF results; OR,
g) Pigs come from a holding which has been inspected at least twice a year with an interval of at least 4 months between inspections by an OV including clinical examination, sampling, confirmation that the holding implements biosecurity requirements, and first 2 dead pigs over 60 days old per week per production unit are tested for ASF
h) the MS of the place of origin immediately informs the Commission and the other MSs of the animal health guarantees (however, that information from the MS of origin shall not be required when the places of origin, transit and destination of the pigs are all listed areas in the Annex and are continuous);
i) the channeling procedure complies with the following requirements:
   i. each vehicle used for the transport of live pigs has been individually registered and sealed by an OV after loading,
   ii. the transport takes place directly without stopping by a route authorized by a GVI official,
   iii. after unloading, the vehicle and any other equipment which have been used in the transport of these pigs are cleaned and disinfected,
j) if the consignment complies with the above conditions, the following wording must be added to the health certificate: "Pigs in compliance with Article 3 of Commission Implementing Decision 2014/709/EU".

3. Movement from a holding located in Part III area to a Part II or III area in another MS may occur under the following requirements:
   a) A slaughter permit has been issued by the DVO;
   b) A clinical examination must be conducted by an OV within 24 hours prior to the movement who issues the health certificate (valid for 48 hours) confirming that no pigs show ASF signs;
   c) Fresh pork, raw meat preparations, mechanically separated meat, minced meat and meat product are marked with a round health mark and distribution is limited to Lithuania only;
   d) The pigs originate from a holding which meets all biosecurity requirements and all holdings in the 3-km radius area comply with these requirements;
   e) The DVO of the holding of dispatch must inform the DVO of the holding of destination of the intention to send the pigs who must then confirm arrival of the pigs; and,
   f) Transport through areas outside of Part III areas must be carried out along predefined transport routes;
   g) Trucks used for transporting the pigs must be cleaned and disinfected as soon as possible after unloading.
   h) the MS of origin immediately informs the EC and other MSs of the animal health guarantees and the approval by the competent authorities for transit and destination; and,
   i) if the consignment complies with the above conditions, the following wording must be added to the health certificate: "Pigs in compliance with Article 3a of Commission Implementing Decision 2014/709/EU".
4. A MS may authorize the dispatch of fresh pig meat, pig meat preparations, and pig meat products consisting of, or containing such pig meat from Parts II, III, or IV restricted areas, to other MSs provided that those pig meat preparations and pig meat products are derived from pigs which have been kept since birth in holdings located outside those areas. The fresh pig meat, pig meat preparations and pig meat products must have been produced, stored, and processed in approved establishments.
5. MSs may authorize the dispatch of fresh pig meat, pig meat preparations, and pig meat products consisting of, or containing such pig meat, to other MSs from areas listed in Part II of the Annex provided that those pig meat preparations and pig meat products are derived from pigs that:

a) have been resident for a period of at least 30 days or since birth on the holding and no live pigs have been introduced into that holding from the areas listed in Parts II, III and IV of the Annex during a period of at least 30 days prior to the date of the movement, and,
b) have been subjected to laboratory testing for ASF with negative results on samples taken in accordance with the sampling procedures within a period of 15 days prior to the date of the movement and a clinical examination for ASF has been carried out by an official veterinarian on the date of dispatch, or
c) the pigs come from a holding:
    (1) that has been subjected at least twice a year, with an interval of at least 4 months, to inspections by the competent veterinary authority, which:
        i. followed the guidelines and procedures laid down in Chapter IV of the Annex to Decision 2003/422/EC;
        ii. included a clinical examination and sampling in which pigs over the age of 60 days have been subjected to the laboratory testing in accordance with the checking and sampling procedures;
        iii. checked the effective application of the measures provided for in the second indent and in the fourth to seventh indents of Article 15(2)(b) of Directive 2002/60/EC;
    (2) that implements biosecurity requirements for ASF as established by the competent authority.

6. MSs may authorize the dispatch of derived products obtained from animal by-products from porcine animals from the areas listed in Parts II, III and IV of the Annex to other MSs and third countries provided that:
    a) the by-products have been subjected to a treatment which ensures that the derived product obtained from porcine animals poses no risks as regards ASF;
    b) the consignments of derived products are accompanied by a commercial document issued as referred to in EU regulations.

9.3 Import markets

Lithuania prohibits imports of animals or animal products from third countries affected with the diseases under evaluation. Lithuania imports animals and animal products susceptible for the diseases under review from other EU MSs [5, 6, 9, 10]. According to data published by the World's Trade Organization, International Trade Center in 2018, Lithuania imported live animals from the following MSs [24]:

- Live bovines – Latvia (top market), followed by Estonia, the Netherlands, Spain, and Poland.
- Live swine – Latvia (top market), plus few shipments from the Netherlands and United Kingdom.

For meat and meat products, the 2018 data lists the top markets for Lithuania were [24]:

- Bovine meat, fresh, chilled, or frozen – the top markets were Poland and Latvia, followed by Germany, Ireland, Hungary, and the Netherlands
- Swine meat, fresh, chilled, or frozen – the top 5 markets are Poland, Belgium, Spain, Austria, and Denmark, followed by Germany, Netherlands, Estonia, France, Latvia, and Estonia.
- Edible offal (large animals) – several EU MSs. Top markets were Poland, Germany, Estonia, Belgium, Austria, United Kingdom, and Sweden.
- Meat and offal, salted, in brine, etc. – top markets were Poland, Spain, Germany, Latvia, and Italy.

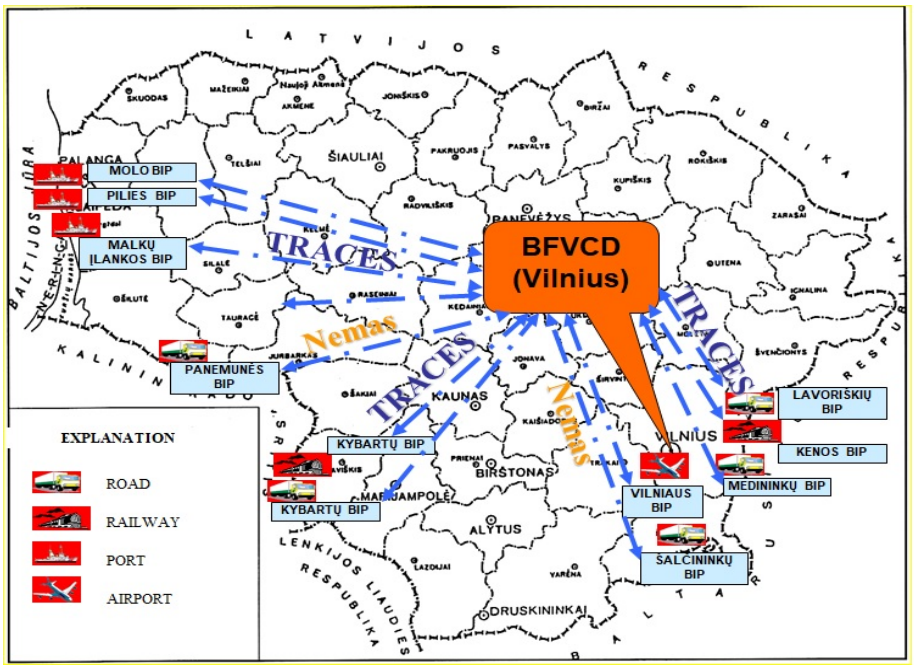
9.4 Border inspection

As mentioned previously, the BFVCD is responsible for all border inspection activities. There are 12 BIPs (air, sea and land) in Lithuania; 11 of which are approved as EC-approved BIPs in accordance with Commission Decision 2009/821/EC which lays down certain rules on the veterinary inspections and lists the EC-approved

BIPs in Europe. The eleven EC-approved BIPs are shown in Figure 11. All shipments of animals and/or animal products must be imported into the EU through approved BIPs [5, 8].

Only 3 BIPs are approved for imports of live animals (Commission Decision 2001/812/EC), namely: 1) Medininkai road BIP; 2) Kybartau road BIP; and, 3) Vilnius airport BIP [5]. Because of the import ban on Belarus and Russia, Lithuania does not import live animals or animal products from either country; however, Lithuania exports live animals (mainly cattle) to Belarus and Russia. The main imports at the BIPs at the Belarus and Russia border are honey, milk, eggs, fish, etc. [8]. Approx. 200-250 live haul trucks used for export of cattle are inspected each year at the two BIPs to ensure that returning trucks undergo cleaning and disinfection before entering Lithuania [8]. At the Klaipeda seaport, the site visit team did not observe much meat and meat products imports and the seaport is not approved for importing live animals [6].

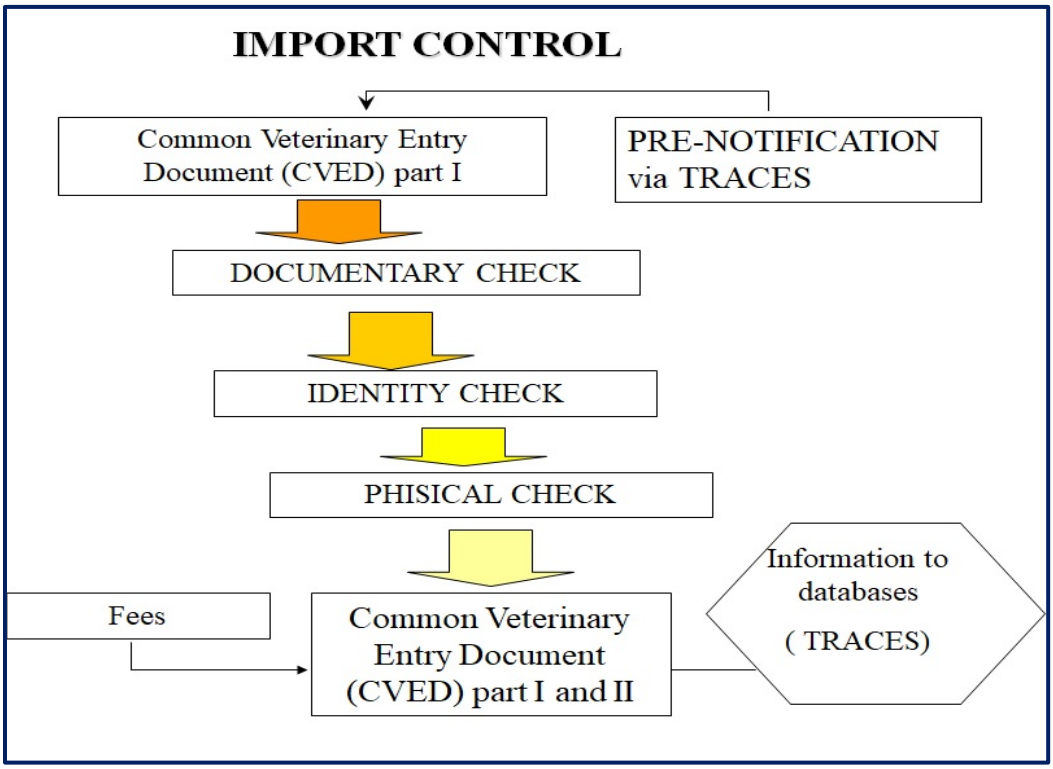
Figure 11: Location and type of EC-approved BIPs in Lithuania



As shown in Figure 12, the BFVCD has an established procedure for the inspection and control of animals and animal products at BIPs and all inspections and laboratory testing protocols follow EC requirements. In general, each consignment if live animals and products undergo four stages of controls at the BIP [8]:

1. Prior to physical arrival of the consignment on Community territory, the person responsible for the load must, at least one working day prior to entry, submit by fax or email all veterinary documents including animal health certificates and the common veterinary entry document (CVED) required by EC legislation to the BIP;
2. Upon arrival, the BIP veterinarian checks all documents accompanying the consignment to confirm that the health certificate is correct according to EC requirements and that it has been signed by an official veterinarian of the exporting country;
3. An identity check or visual confirmation of correct ear tags, chips, tattoos, or codes for live animals and visual inspection of the products consignment to ensure that the veterinary certificates match with the consignments; and,
4. A physical check with a percentage of the shipment singled out for more thorough examination.

Figure 12: BFVCD procedures for import control of animals and animal products



During the site visit, Lithuanian officials informed the team that all shipments are subject to 100% document and identity control. Whether or not a physical check is conducted depends on a risk-based assessment of the products as described in EC legislation. Specifically for live animals, if they are imported for breeding or production purposes, 10% of the animals, but not less than 10 animals must be clinically inspected. If the consignment consists of less than 10 animals, each animal shall be examined. If animals are imported for slaughter, at least 5% of the animals, but not less than 5 animals are clinically examined and if the consignment is less than 5 animals, each animal is examined. A shipment is 100% inspected if there is suspicion of disease. Laboratory samples are taken as prescribed and hand-delivered to the laboratory with control samples being kept at the BIP [6].

The largest number of import or transiting consignments of animal products enter Lithuania through the Klaipeda Seaport. There are three BIPs at the Seaport: Malku Ilankos BIP, Molo BIP, and Pilies BIP. The Malku Ilankos BIP is only approved for animal origin products and other commodities such as fish, poultry, milk etc. The other two BIPs are involved with exports, mainly of milk products, cheese, butter, poultry etc. The APHIS site visit team verified that BFVCD and Customs officials conduct import inspections at this BIP in accordance with established procedures and EU and Lithuanian regulations [5, 8].

If the veterinary inspection is satisfactory, the official veterinarian who conducted the inspection completes, stamps with the BIP stamp and with his/her own name stamp and signature, checks and signs the CVED; log the information in the registers of consignments to be imported; enters information about the consignments of animals and animal products into the TRACES information system; and, passes the CVED to the Customs Service. The original of the CVED accompanies the shipment to the point of destination and shipments must follow an approved route plan to their destination [6, 8].

There are two options for rejected shipments; they are either destroyed or re-dispatched to the exporting country under specified conditions. The main reason for shipment destruction is lack of import certificate; and

for re-dispatching the main reasons are: the exporting country is not approved or banned, and issues with the import certificate (certificate illegible or not officially approved) [6, 8]. During 2016 – 2018, the number of rejected shipments of animals and animal products ranged from 15 to 26 per year is shown in Table 8.

Table 8: Number of rejected shipments

Years	2016	2017	2018
Total	15	26	20
Re-dispatched	12	18	18
Destroyed	3	8	2

9.5 Transit controls

Transit of products between third countries is allowed under EC legislation, provided that there are no import restrictions on the source country. The conveyances are sealed at the point of origin in the third country, although officials at the point of departure from that country can break and replace the seal for inspection purposes. A Lithuanian customs officer records the seal number and breaks the seal upon arrival at the BIP point of entry. The products in transit undergo the same checks as imported consignments, but no further unloading or alteration of the cargo is allowed while in Lithuania. A veterinary inspection seal and customs seal are applied at the entry BIP for transit, a route plan is approved, and a specific exit point is designated. The BIP at the point of exit is notified of the transit shipment, records the exit, and sends confirmation back to the BIP at the point of entry when the vehicle leaves the country [5, 6, 8].

9.6 Passenger traffic

Imports of pork and pork products for personal consumption are not permitted in accordance with EU regulations. All passenger luggage entering Lithuania from third countries is screened at any of the BIP, sea ports, and airports by Customs and border patrol guards using non-intrusive methodology, such as x-ray equipment and/or sniffer dogs; however, manual inspections can be carried out if necessary. Passengers traveling within the EU are not subject to such inspections. Food collected/seized from personal luggage at BIPs is destroyed by incineration under SFVS control. Any meat or meat products seized at the border is destroyed as category 1 material in an approved rendering plant [5, 6, 8]. There is only one approved rendering plant in the west. In 2018, SFVS reported seizure and destruction of 5202 kg of prohibited animal origin food products [8].

9.7 International waste

Waste generated on board of vessels and remains of consignments are handled in accordance with EU regulations and by the order of Minister for Transport and Minister for Environment on handling waste generated on board of vessels and consignments. International waste can be only loaded on a vessel, unloaded from a vessel, or transferred from one vessel to another by permission of the customs authorities. Food waste and dead animals can be unloaded from a vessel only after SFVS has been informed. Food waste and dead animals are considered as category 1 animal byproducts (ABP) which are sent for disposal by incineration. Food waste from aircrafts coming from third countries is not left in Lithuania. No cruise ships come to the Klaipeda port directly from a third country; all ships come from other EU seaports [6, 8].

10 Export controls

SFVS ability to ensure that exported animals and animal products comply with importing country requirements centers on its systems for inspections, slaughter controls, identification and traceability, movement controls, and export certification. More animals are exported than imported in Lithuania and these are mainly breeding bovine and slaughter animals, which are sent directly to the slaughterhouse. Live animals are mainly transported to other EU MSs or to the third countries by roads. Live pigs and pork used for production of ready to eat pig meat products intended for export to the U.S. can only originate from free areas [5, 8].

10.1 Approval of establishments

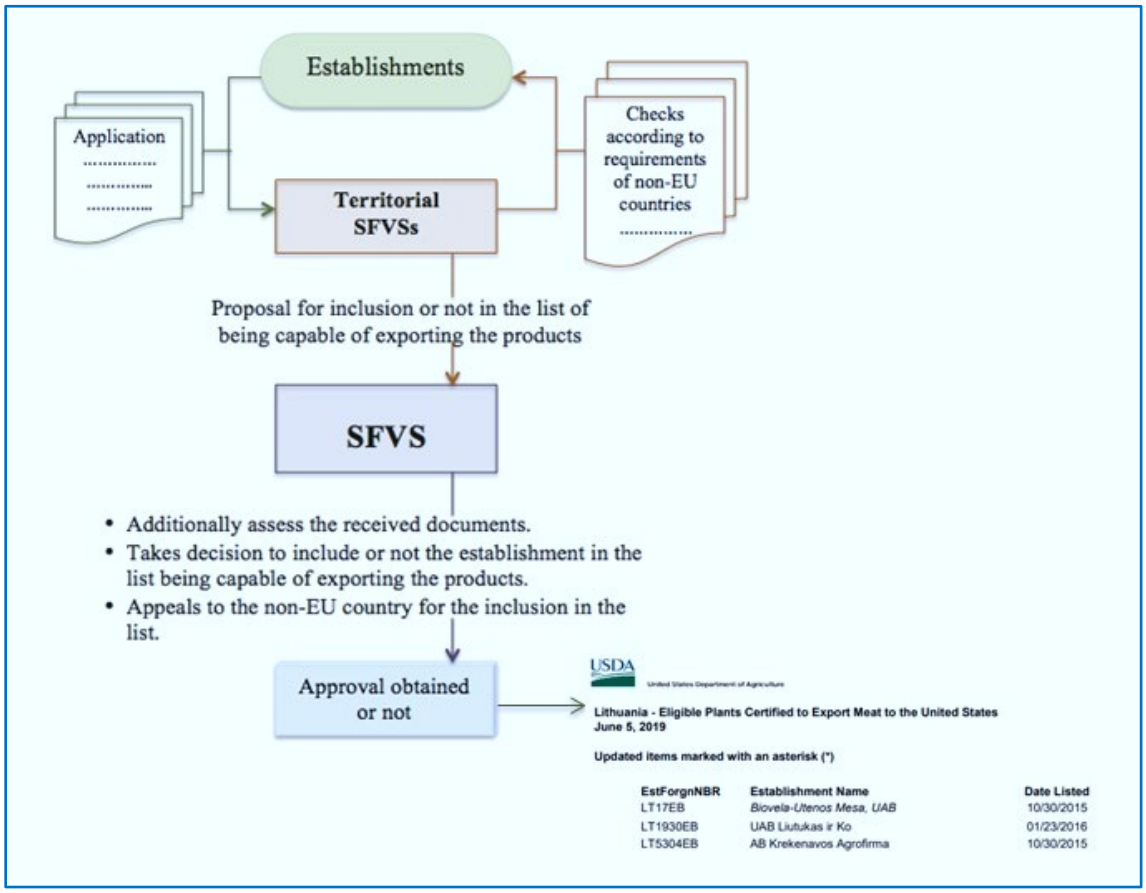
Pork production is highly commercialized and is concentrated in the eastern and central parts of Lithuania where large CF are located. There are 38 meat plants in Lithuania (18 slaughter, 18 cutting, and 2 slaughter plus cutting). There are 3 establishments that were authorized to export pork products to the U.S. from Lithuania; APHIS does not currently allow imports of products from any of the 3 establishments because it considers all Parts (I-IV) to be restricted and prohibits pork or pork products from such regions unless it complies with all requirements in Section §94.8 of the CFR [6, 8].

All companies intending to export meat or meat products to the U.S. must comply with APHIS and FSIS requirements and must be included in FSIS' approved establishment list. The company submits an application to the district SFVS to be approved to export fresh meat and heat-treated meat products to the U.S. along with documentation on the following [25]:

- Implementation of the Hazard Analysis and Critical Control Point (HACCP) System and procedures in accordance with EC regulation No. 852/2004.
- Implementation of procedures to ensure compliance with U.S. requirements with emphasis on the separation of production processes for meat and meat products intended for the U.S. market from the production processes for meat and meat products intended for other markets.
- A laboratory testing program for production intended for the USA and analysis of laboratory testing results obtained for at least 2 months to ascertain that the production manufactured for the U.S. market is in compliance with FSIS requirements.

The DVO will review the application and attached documents to ensure that all production and processing information comply with U.S. requirements as well as the EU's and SFVS' regulations. The DVO will then submit his/her recommendations to include (or not include) in the list of approved establishments to SFVS central office. SFVS will review the application and attached information and make a decision on inclusion in the list, and if so, communicate the decision to the U.S. Figure 13 shows a flowchart of the steps followed for review and approval of slaughter and processing establishments [8].

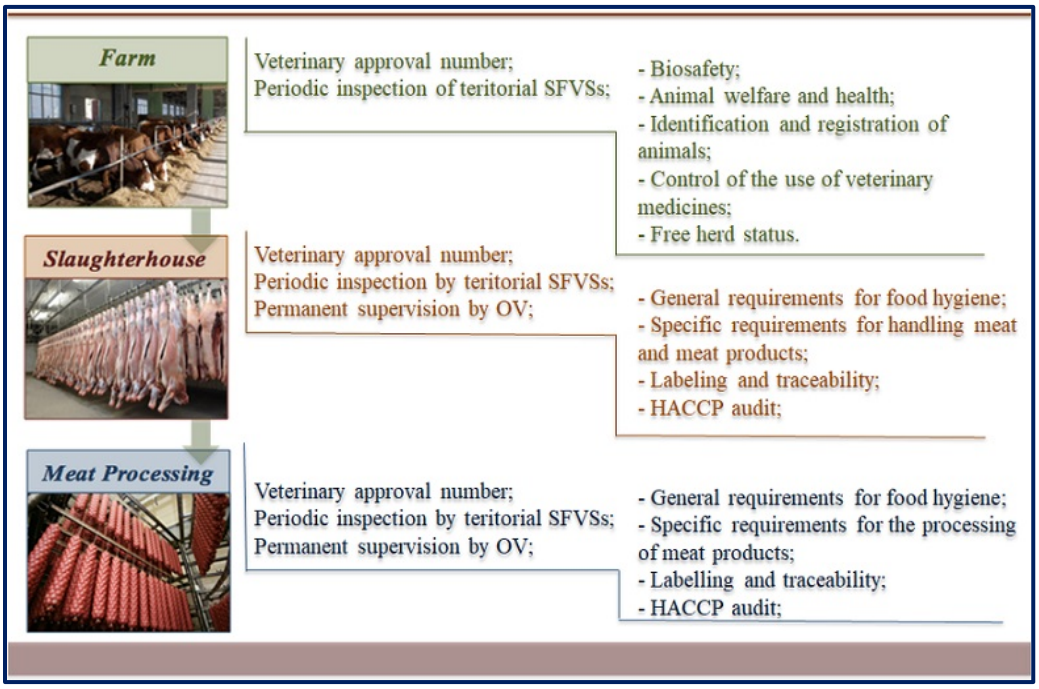
Figure 13: Flowchart for approval of slaughter and processing establishments



10.2 Slaughter and processing controls

As mentioned previously, the VSD department of SFVS is responsible for control and inspection of all slaughter and processing plants. VSD implements specific official controls on products of animal origin intended for human consumption in accordance with EU regulation No, 854/2004. All meat production establishments are classified as high risk; therefore, a planned state veterinary control of meat enterprises is carried out by district SFVS once a year in accordance with the Quality System Program which includes the frequency of inspection of each entity, sampling procedures, and the HACCP system. Meat processing plants approved for export to the U.S. are subject to the same planned inspection frequency. All meat or meat products destined for the U.S. must originate from ASF-free areas. Figure 14 shows VCD controls on farms, slaughter plants, and meat processing plants [5-7].

Figure 14: VSD controls on slaughter and processing establishments



Official controls on slaughter start at the farm level; each company keeps a list of approved suppliers of pigs to the plant, which is approved by VCD based on the latest regionalization for ASF, EU implementing decisions for ASF, compliance with biosecurity requirements, and no introduction of pigs from protection and surveillance zones. The suppliers list is updated regularly by SFVS based on changes in ASF-restricted areas. Slaughter plants must submit their purchasing and slaughtering plans to the VCD OV a week in advance (every Thursday for next week slaughter) [5, 8].

All incoming and outgoing trucks transporting pigs to the slaughter plant must be thoroughly cleaned and disinfected and recorded in a log book. The OV will issue a cleaning and disinfection report to document the process. The OV will check all transport documents accompanying the animals and ensures that everything is in order and done in accordance with the regulations and the approved slaughter plan. Transport documents include: transport certificate, slaughter permit (issued by an AV), and ASF laboratory testing results (passive surveillance).

All slaughter procedures and inspections are carried out under the control of OVs permanently stationed at the plants. The OV supervises pre-operation sanitation and must be present upon arrival and unloading of the animals to check for proper movement documentations, laboratory results (depending on origin area), and to conduct the ante-mortem inspection once the animals are unloaded into the receiving pens. The ante-mortem inspection involves visual observations of all animals for disease signs, injuries, tiredness or agitation, cleanliness, and animal welfare status. The OV must also measure rectal temperature from no less than 10% of the incoming pigs. All pigs that are dead on arrival are necropsied and tested for ASF. Slaughter must occur within 24 hours following the ante-mortem inspection, otherwise, it must be repeated [6, 8].

Post-mortem inspection is also carried out by OVs who must be present on each slaughter line. The inspection involves primary examination of the carcass and head, checking for fecal contamination, abnormal pathology, improper blood drainage, sampling for trichinella, examination of internal organs (heart, liver, spleen, lymph nodes, and genital organs), and a final visual inspection of the carcass and applying the appropriate stamp. Tainted or contaminated carcasses and offal are removed via a separate line for further examination or

laboratory testing; if significant issues are observed, the lines can be stopped until the issue is resolved. Condemned carcasses (for chronic diseases or other problems) are labelled accordingly and sent to disposal as category II materials [6, 7].

Each half carcass receives a health stamp, which is applied only when there are no grounds for declaring the meat unfit for human consumption. Carcasses that are approved for the EU or for export to the U.S. receive official oval-shaped stamps containing the establishment approval number; otherwise, a special triangular stamp is used for meat destined to the Lithuanian domestic market. Carcasses are stored in cold rooms; those used to produce U.S. products are stored in dedicated cold rooms and are processed first. Carcasses are then directed to deboning and cutting lines which are separate depending on the part of the carcass and sometimes, the intended use of the product. Traceability is maintained throughout the slaughter and processing process (see below) [6, 8].

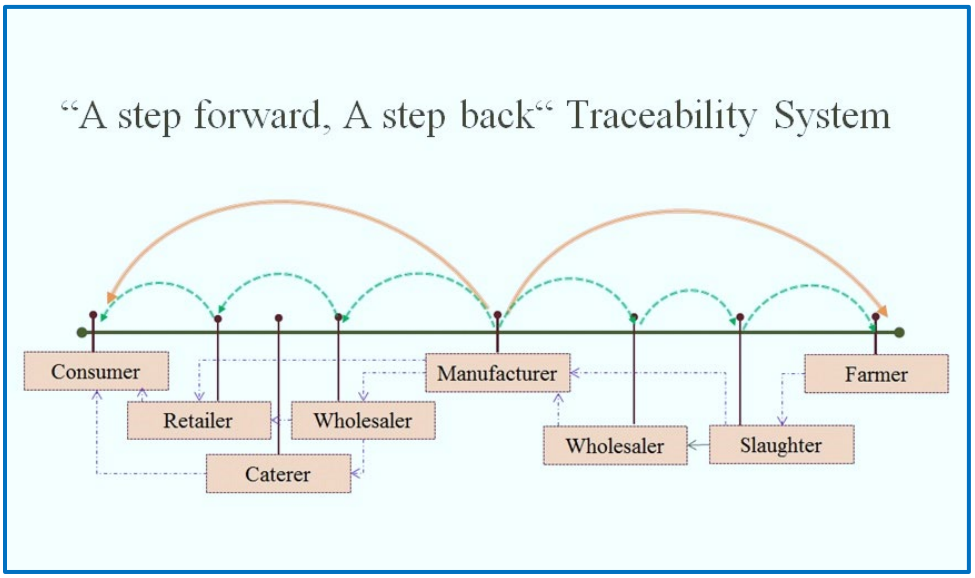
The APHIS team visited a slaughter and processing establishment (Biovela-Utenos mėsa, UAB, veterinary approval No LT17 EB) conducted interviews, and reviewed documents at different levels of slaughter and production [6]. The team observed the OV conducting the ante-mortem inspection, reviewed the movement records, the accompanying health certificate of the lot, cleaning and disinfection logs, and traceability documents identifying all the required information for the animals maintained in the office, and confirmed that all animals arriving at the slaughterhouse received ante-mortem inspection within 24 hours prior to slaughter. The team also observed the entire slaughter and processing activities including post-mortem inspection stations, deboning, cutting, processing, packaging, labeling, and storage, and confirmed that all procedures are conducted under supervision by OVs at plants. In addition, while visiting various areas inside the plant, the APHIS team observed and went through strict biosecurity procedures. Strategically located stations for changing uniforms and boots, in addition to washing and disinfection units for hands and boots, wearing of hair nets, etc. [6, 7].

10.3 Traceability

Traceability means the ability to trace and follow a food, feed, food-producing animal or substance intended to be, or expected to be incorporated into a food or feed, throughout all stages of production, processing, and distribution. All food or feed which is placed in the market or is likely to be placed in the market in the EC must be adequately labelled or identified to facilitate its traceability, through relevant documentation or information in accordance with Regulation (EC) No. 178/2002 of the European Parliament and of the Council for food of animal origin and other relevant requirements.

SFVS requires FBOs to have a traceability system based on the "one step back - one step forward" approach, which implies that FBOs have in place a system enabling them to identify and link their immediate suppliers of animals and products and their immediate customers of their raw materials, semi-finished products and products used for production and make this information available on demand to SFVS. Figure 15 shows the "one step back - one step forward" approach for traceability implemented by SFVS [5-7].

Figure 15: SFVS traceability system



The traceability system must include the following information [5-7]:

- Information on animals, raw materials, semi-finished products, products, and additional allowed substances incorporated into a particular product as a part of a food product in the course of its production, preparation, or processing, and materials and products intended to come in contact with food;
- An accurate description of the food and the volume or quantity of the product;
- The name and address of the FBO or the consignor (if different) from which the product has been dispatched; and,
- The name and address of the FBO or consignee (if different) to whom the food is dispatched; and,
- A reference number or code identifying the lot, batch, or consignment, and the date of dispatch.

During the visit to the slaughter and processing plant, the team observed that it is managed by an electronic labeling system (the ERP system), which was very well documented. The team also observed that the company separates production batches and equipment for products destined to the U.S. market. A traceability demonstration was conducted on a sample of a finished products and the company was able to trace back to the supplier farm. In addition, the company demonstrated trace forward on paper to the place of destination of meat and meat products [6].

The team found that the company can sometimes supplement their raw meat from other EU MS (Germany, France or Denmark) whenever there is a need to meet product orders from U.S. clients. The process for doing that is similar to the one described above – establishment approved by FSIS (not necessarily by APHIS), pre-certificate; by the competent authorities of that country, followed by all steps to meet U.S. import requirements. The company confirmed that the batch of raw meat is shipped in sealed containers; however, sealing of products is not required since this is considered free EU trade. The team reviewed a copy of an issued pre-certificate and confirmed that it had a seal number. Intra-EU trade and third countries trade information is reported into the TRACES data system which is available to SFVS staff [6].

10.4 Export certification

SFVS utilizes a structured system for export inspection controls to ensure that all shipments of live animals and animal products comply with requirements of the importing country, as well as with EU requirements. Export

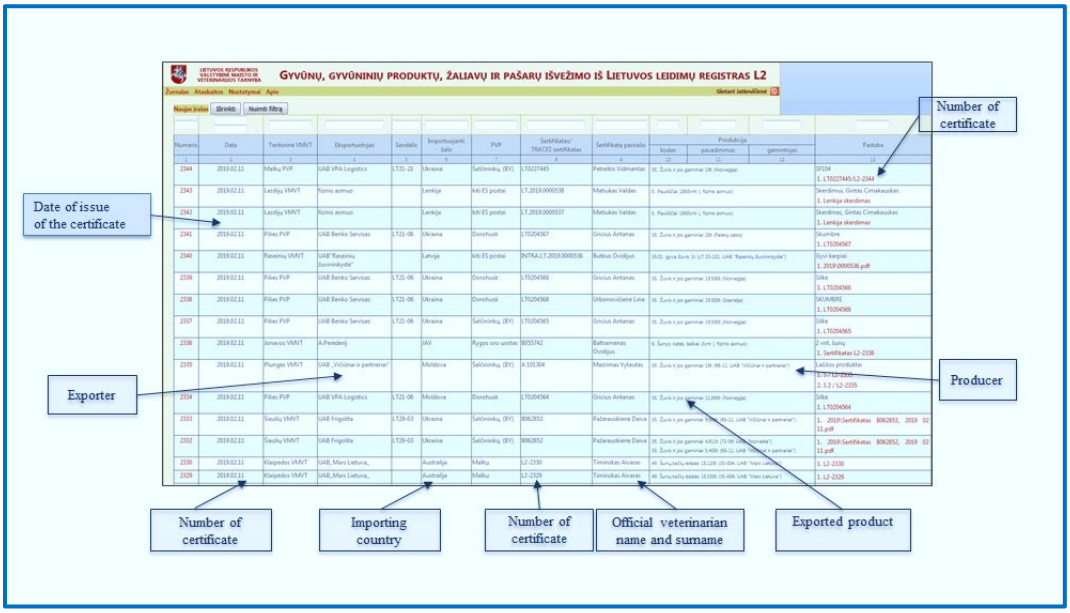
certificates are issued in accordance with the general principles of certification laid down in Council Directive 96/93/EC and those of Annex IV to Council Directive 2002/99/EC; the Order of the SFVS Director No B1-288 “Procedure for issuing certificates” [26]; and procedure KT-6-9-D1 for approval of conformity of FBOs of food products of animal origin engaged in exports to third countries and certification of products [25].

SFVS certifies the health status of animals, meat, and meat products based on information contained in the ADNS system; regular inspections at establishments performed by the DVO or OVs authorized by him/her; results of any required laboratory tests; information contained in electronic systems (e.g. CDB, ERP); assessment of the quality and safety assurance procedures at the establishment; and, ensure compliance with the specific requirements of third countries [5, 6, 26].

Prior to issuing the certificate, the OV conducts a pre-export inspection which includes verification of all documentation regarding the batch of product sent, such as dates of slaughter, cutting, production, and labeling, expiration date of the product, product weight, the cleanliness of the means of transport, temperature of the assortment etc. The documentation review also includes confirmation of APHIS and FSIS requirements, checking the establishment’s specifications of shipments, checking the provisions of the establishment's pre-shipment review related to the manufacture of products to ensure completeness of records, establish that critical limits have been met at all critical control points (CCPs) and that the establishment took corrective actions including appropriate handling of the product. The OV accepts the shipment for certification after conducting this review, and ensuring that all pre-shipment documents are correct, and the results of all tests are acceptable [6, 8, 26].

Export certificates can only be signed by an OV at the plant; the DVO must keep a list of all OVs entitled to issue and sign the certificates. The OV issuing the export certificate should have knowledge of the provisions contained in relevant legal acts, be familiar with the rules of conducting veterinary checks, and the manner of issuing health certificates. The OV should not certify data of which he/she has no personal knowledge or cannot be checked, or sign unfilled or incompletely filled health certificates, or certificates for products that were produced in companies not under his/her direct control. In addition, the OV must register all signed certificates in the official SFVS register tracking system as shown in Figure 16. Copies of export certificates must be kept for 3 years from the date of issue or for a longer period, if required by a third country [7, 26].

Figure 16: Sample page from the register tracking system for export certificates



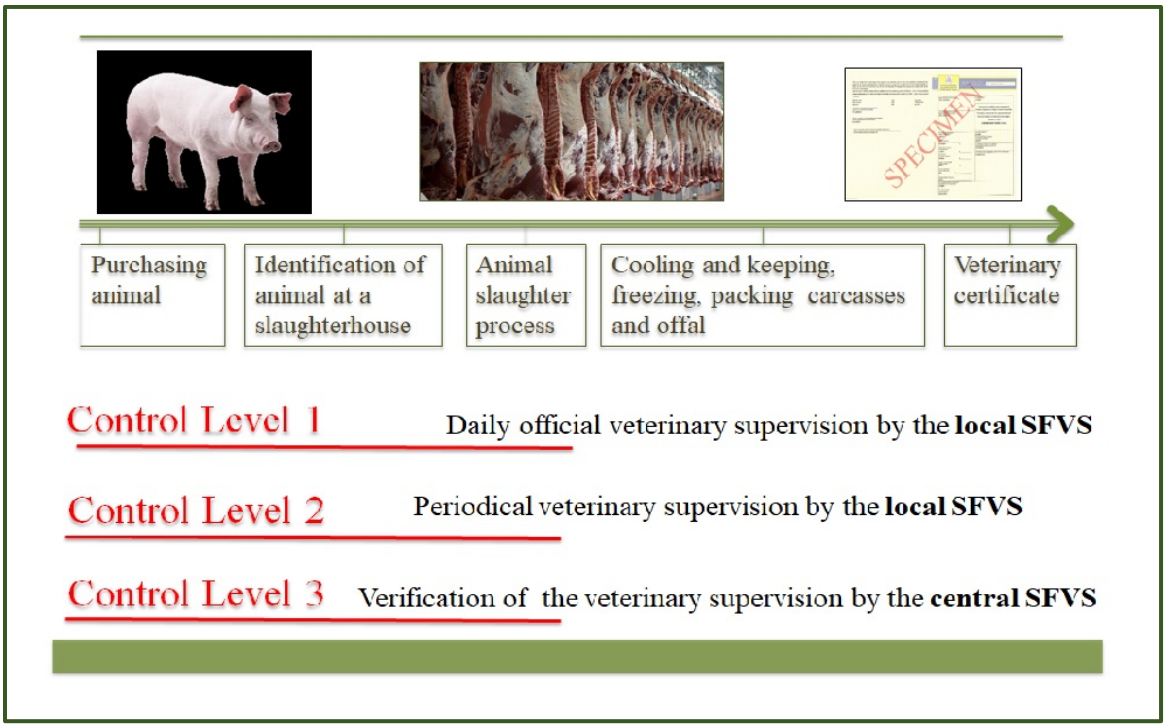
Immediately after loading, the OV puts a seal on the means of transport, container or box, if required by the third country of destination of these products. The OV can re-apply a new seal in the event of breaking the seal during inspection by the customs authority. The DVO must keep a register of issued seals at the district SFVS office, which includes among other information: name and surname of the OV, date of collection of seal, signature of the OV collecting the seal, the date of returning the seal, signature of the OV taking the seal, and the imprint of the issued seal [5-7, 26].

The DVO controls all export certification conducted by OVs at establishments under their jurisdiction. The DVO issues a batch of blank export certificates with specific numbers to the OV at the plant, who must keep it under their control at all times. In addition, the DVO conducts periodic reviews of OVs who issue export certificates at the plant to verify the correctness of all official and certification activities. In that regard, the DVO checks whether the OV properly conducts the following activities [5-7, 26]:

- Checks labels and export health certificate for accuracy;
- Checks the product and packaging to ensure it meets the requirements for health quality specified in the applicable regulations;
- Reviews the establishment's pre-shipment documentation;
- Secures access to official seals and personal stamps;
- Supervises product marking with correct identification marks;
- Notifies the establishment of batches of products not qualified for shipment, explains the reasons, and interprets the relevant requirements; and,
- Ensures that all CCPs meet general hygiene requirements and instrument control requirements.

As shown in Figure 17, verification of traceability is carried out by SFVS on three levels: [7] 1) supervision by the OVs at the plant during daily operations; 2) periodic inspection by the DVO; and, 3) verification by the central SFVS.

Figure 17: Levels of traceability controls and verification



The EU and Lithuanian legislations establish the duties and rights of SFVS and FBOs. The Administrative Code of Lithuania provides SFVS the authority to apply a range of sanctions including warnings, penalties and confiscation, suspending or prohibiting export of products to third countries, or suspending or canceling the export approval of FBOs [7].

11 Review conclusions

APHIS concludes that SFVS has sufficient legal authority to carry out animal health programs including official controls and field activities for all the diseases under review. Review of information provided by Lithuania demonstrated adequate technical infrastructure of official and authorized veterinarians, support personnel, and financial resources for carrying out disease control and eradication programs. During the September 2019 site visit, the team observed that OVs are familiar with the provisions of the EC and Lithuanian legislation for the diseases under evaluation.

11.1 Likelihood of presence of the hazards

Based on documentation provided by Lithuania, APHIS did not find evidence to suggest the presence of FMD, CSF, or SVD in Lithuania. There have been no detections of FMD since 1982; CSF since 2011; and SVD has never been detected in Lithuania which is supported by ongoing passive and/or active surveillance for these diseases. In addition, there is no evidence available to APHIS to suggest that these diseases may exist in wildlife populations in Lithuania which is supported indirectly by ongoing surveillance for these diseases in domestic populations with the highest risk of contact with wild animals. Vaccination against all four diseases is prohibited or has never been used. Therefore, APHIS concludes that the likelihood of presence of FMD, CSF, or SVD in Lithuania is negligible. By contrast, APHIS considers ASF to be present in both domestic swine and wild boar populations in Lithuania since 2014.

11.2 Likelihood of introduction of the hazards

APHIS considers that there are no natural barriers sufficient for restricting animal movement and human traffic except for the Baltic Sea in the west. Roaming of susceptible animals, in particular wild boar into Lithuania through international borders with affected regions could occur with little or no physical barriers, particularly from neighboring regions where the status of the diseases under review are unknown or remain uncontrolled. In that regard, APHIS considers the Kaliningrad region of Russia and Belarus to be affected with the diseases under review; therefore, APHIS cannot exclude the possibility that the diseases exist in the two regions. However, as mentioned in section 2 of this report, FMD and SVD have never been detected in wild species in Lithuania. Additionally, APHIS found that there has been no evidence of FMD or SVD introduction via wildlife in Lithuania from neighboring regions. Considering the epidemiological status for FMD and SVD in European wild boar populations, combined with rigorous biosecurity requirements on swine farms and hunting clubs, APHIS considers the likelihood of introducing FMD or SVD virus into Lithuania via susceptible wild animals to be negligible.

By contrast, APHIS considers the likelihood of CSF introduction via migration of wild boar from potentially affected neighboring regions to be higher, given the history of the disease in wild boar populations. Likewise, APHIS considers the likelihood of ASF introduction via roaming wild boar from affected neighboring regions to be high and an issue of concern for exposure of domestic swine particularly in small farms. However, Lithuania is implementing rigorous surveillance and sanitary hunting strategies to detect infected and dead wild boar and to reduce the wild boar population. In addition, Lithuania imposes very high and strict biosecurity requirements and movement controls on all swine farms and hunting clubs. These strategies led to significant reduction in

the numbers of small swine farms and subsequently reduce the likelihood of exposure of domestic swine to infected wild boar to a low level.

Lithuania imposes a stringent system for legal importation of animals and animal products that consists of certification requirements, transit controls, intra-Community trade requirements, transport requirements, and border inspection controls to mitigate against introduction of the diseases under review. This system is harmonized with EC regulations which include multiple levels of inspections and verification of import and transit requirements. In addition, there appear to be sufficient controls on passenger traffic coming from third countries, as well as handling of international waste (flights from third countries, ships, cruises, etc.). However, there are no controls on passengers traveling within the EU, which means that passengers that might be carrying products from ASF-restricted areas can move freely within the EU. However, it was demonstrable during the site visit that SFVS conducts a considerable amount of outreach and education campaigns and posts information on prohibited products at airports and passenger crossings. The feeding of waste of animal origin originating from international sources, slaughterhouses, restaurants, hospitals, or other establishments to pigs has been prohibited since 2008. Therefore, APHIS concludes that Lithuania has demonstrated that sufficient controls exist to mitigate the likelihood of introduction of the diseases under review via legal importation of susceptible animals and animal products from affected regions to a negligible level.

11.3 Detection, effective control, and response

APHIS concludes that Lithuania has a comprehensive surveillance system capable of detecting all of the hazards under review. Active and passive surveillance systems for FMD, CSF, ASF, and SVD are in place and are appropriate given Lithuania's disease history, geographical location, and import practices. The SFVS takes into consideration important factors such as higher risk areas, production type, vaccination status, and presence of and interaction with susceptible wild animals when designing its surveillance programs. Adequate laboratory procedures and capabilities are available to support surveillance programs and testing, is conducted in accordance with the OIE's Diagnostic Manual and latest scientific methods.

By law, all of the hazards under review are reportable and SFVS passive surveillance programs depend on this mandatory reporting requirement. SFVS enhances its passive surveillance through conduct of various outreach/education materials and training sessions to producers, veterinarians, and hunters using multiple types of delivery and mass media.

APHIS considers Lithuania to have sufficient controls in place to rapidly detect the hazards under review and manage its animal disease investigation, response, and control programs effectively using comprehensive emergency response plans and available resources. Adequate protocols and authority for implementing controls of potential occurrences of the hazards are in place and all animal disease events are investigated by trained official veterinarians and staff. SFVS has demonstrated that it can promptly notify the EC, the U.S. and/or the OIE of hazard events and introduce sufficient controls to trace and prevent product shipments from being exported.

Therefore, APHIS concludes that if FMD, CSF, and SVD were to be introduced into Lithuania or if ASF were to be introduced into other free areas of the country, the likelihood they will remain undetected and spread all over the country is negligible. However, APHIS also concludes that ASF will continue to circulate in Lithuania's wild boar populations for some time; as a result, it is highly likely that more ASF detections in wild boar will occur, and the disease will slowly spread in wild boar with occasional spill over into the domestic swine populations.

11.4 Export certification

Lithuania applies adequate movement controls on animals and animal products, implements appropriate animal identification and traceability systems, and implements stringent systems of verification and inspections for

certifying exports of animals and their products. Export verification and certification systems for the diseases under review ensure that exported animals and animal products, beginning at the farm and extending through all components of production meet importing country requirements. Therefore, APHIS concludes that the likelihood that ineligible animals and animal products be certified for export to the U.S. is negligible.

The EU allows certain derogations by which live swine, swine meat and meat products can move from ASF-restricted areas to other MSs or third countries. Lithuania considers Part I areas to be free from ASF (buffer) and thus, allows the movement of live swine under certain conditions from farms located in Part I to other MSs and third countries. In addition, these ASF derogations allow movement of fresh swine meat and meat products from Parts II, III, and IV provided they are produced from pigs that originate from farms in unrestricted areas; however, such movements are allowed only under very stringent conditions. On the other hand, APHIS considers all Parts (I-IV) to be restricted and prohibits pork or pork products from such regions unless it complies with processing requirements in Section §94.8 of the CFR. Similar to the situation with CSF restrictions, there is a potential that fresh pork from ASF-restricted areas might end up in other unrestricted MSs and later shipped to the U.S. However, the EC's and Lithuanian regulations require that all fresh swine meat and meat products must be sourced and processed in accordance with U.S. import requirements and is prepared and processed in approved establishments. Therefore, APHIS concludes that the likelihood that fresh meat and meat products sourced from ASF-restricted areas is exported to the U.S. is negligible.

With regard to CSF, the EU lifts its restrictions on regions or zones affected with CSF in domestic swine or wild boar 30 days after cleaning and disinfection of the last affected holding. However, APHIS import regulations in Section §94.31(1)(a)(ii) of the CFR specify that a designation of a restricted area must remain in place for a minimum period of 6 months. The difference in the time frames in APHIS' and EC's regulations coupled with free trade in pork and pork products among EU MSs might hinder the ability of EU officials to certify shipments in accordance with APHIS import requirements. However, EC and Lithuanian regulations require that certifying officials review all documentation and confirm the origin and sourcing of animals and products prior to issuing export certificates.

12 Recommendations

Based on the conclusions of APHIS' review of Lithuania's animal health statuses, APHIS recommends that the current conferred statuses and import mitigations for ASF, CSF, FMD, and SVD are appropriate. Recognition of these statuses will be maintained until the next APHIS review or until a change in Lithuania's animal health status is reported.

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