GF-TADs
GLOBAL FRAMEWORK FOR THE PROGRESSIVE CONTROL OF TRANSBOUNDARY ANIMAL DISEASES

Food and Agriculture Organization of the United Nations

WORLD ORGANISATION FOR ANIMAL HEALTH

Standing Group of Experts on African swine fever in the Baltic and Eastern Europe Region under the GF-TADs

Expert mission on African swine fever in **Czech Republic REPORT**[1]

- **Period**: 16 - 19 October 2017

- **SGE Experts**: Vittorio Guberti (team leader, Italy); Ago Pärtel (Estonia); Alexy Igolkin (Russia), Marius Masilius (Lithuania), Klaus Depner (Germany)

- **Time schedule and places visited during the mission**:
  - 16 October: Arrival in Prague
  - 16 October 15.00: Opening meeting with the Central Veterinary Authorities; discussion about the epidemiological situation in the Czech Republic.
  - 17 October morning: TEAM 1 (VG and KD) travel to Zlin; TEAM 2 (AP, MM; AI) travel to Jhilava (NRL)
  - 17 October afternoon: TEAM 1: meeting with the Regional Veterinary Service, Regional Hunting Authorities, Hunting Association, Hunters of the infected grounds; TEAM 2: visit to the National Reference Laboratory
  - 18 October (joined teams): visit to a commercial farm; a non-commercial farm (back yard) and to the fenced area including carcass collection centres, unharvest fields.
  - 19 October:
    - Morning: Feed back to the Regional Competent Authorities;
    - Travel to Prague
    - Afternoon: Closing Meeting at the Central Veterinary Service.

[1] Disclaimer: The views and recommendations expressed in this document are those of the independent experts and may not in any circumstances be construed as the official position of their organisation, nor of the EC, OIE or FAO

❖ Terms of reference

1. The experts should perform on the spot visits (as detailed in the Annex) in order to gather data and be in a position to formulate recommendations on disease management.
2. The experts should work with the Veterinary Services in order to determine the following aspects:
    a. If African swine fever (ASF) is occurring in domestic pigs (both in commercial sector and the so called back yard sector) and extent of the areas of occurrence.
    b. If ASF is occurring in wild boar and geographical distribution of ASF in wild boar.
    c. Formulate hypothesis on the drivers of ASF occurrence.
3. Propose measures intended for the control and eradication of ASF under local conditions, in line with the OIE International Standards.
4. The experts should report to the Standing Group of Experts on African swine fever in the Baltics and Eastern Europe under the OIE/FAO GF-TADs and to the Veterinary Services of the country being visited. A written report should be produced for each mission.

The list of the persons who were met during the different meetings held during the mission is attached in Annex 1.

❖ Findings of the mission

ASF chronology in Czech Republic

21 June 2017: ASF has been suspected in a dead found wild boar in the Municipality of Zlin, District of Zlin, Region of Zlin close to the local hospital;

26 June 2017: ASF confirmed through Laboratory investigation;

27 June 2017: a wild boar infected area has been established. The infected area is the whole district of Zlin (1034 km^2, 37 municipalities, 89 hunting grounds);

13 July 2017: Intensive hunting in a buffer area around the infected area;

18 July 2017: the infected area has been divided in two sub-areas: high risk (including a higher risk fenced area) and low risk infected sub-areas.

21 July 2017: hunting allowed in the low risk sub-area of the infected area.

11 September 2017: Individual hunting allowed in the high-risk sub-area including the fenced sub-area.

Infected area:
Figure 1: general view of the areas that underwent to specific ASF control measures.
Green: infected area (District of Zlin);
Red: high and higher risk infected area (fenced area plus buffer zone);
Yellow: area where specific wild boar hunting measures are applied;
Figure 2: the so called "behind fenced", defined as higher risk area;

Figure 1: the interested area;

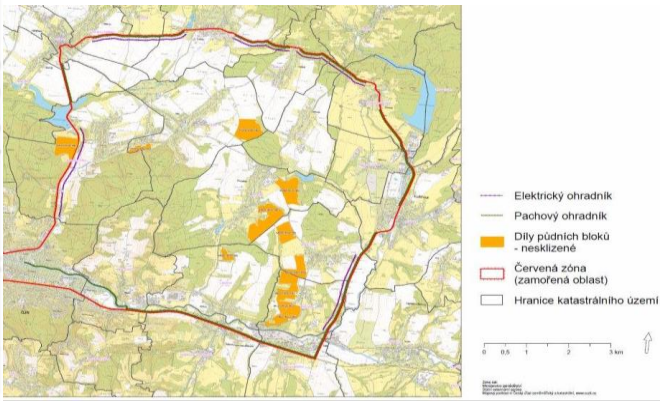

Figure 2: Higher risk area (fenced area)

General control measures applied in the infected area
The following measures have been taken:

WILD BOAR

1) Increased passive surveillance (each found dead wild boar is rewarded)
2) Ban of hunting (any species, any hunting system)
3) Ban of wild boar feeding
4) Ban of entrance for the general public into the high and higher risk areas (red areas)
5) Sampling and testing for both ASF and CSF (PCR) each found dead wild boar;

Carcasses are collected in a plastic bag, identified with a "earmark" and carried to the nearest road where dedicated vehicles transport them to the rendering plant (about 70 km distance). An official veterinarian samples carcasses at the rendering plant.

From 21 July: Hunting has been allowed only in the green area (low risk area)
From 11 September: Hunting has been allowed in the red area (higher and high risk areas)
In both areas, only trained hunters are allowed to hunt. All hunted animals are collected in designed wild boar collecting points, safely dispatched to the rendering plant, sampled by an official veterinarian and disposed.

1) Highest-risk area
The size of the area is 57.2 km^2 and defined as the "behind fence" area.
From the initial phase of the epidemic, to limit the possible movement of wild boar, all the perimeter of the high risk area has been fenced with a so called "odour fence", and in addition, to increase fence efficiency, an electric fence has been added in the most permeable sectors (i.e. unpaved roads in the forest). The whole perimeter is about 32 km with 10 km of electric fence.
The odour fence is made up by a line of simple plastic cups (cups are at a distance of 5 meters each one). The cups are placed on the ground and are filled by synthetic foam soaked with a

chemical substance mimicking natural odour of predators (at least wolf and brown bear) including humans. The foam has to be soaked every 4 weeks; according to the producer, rain does not affect the efficiency of the odour substance.
In the area, some unharvest fields are available to wild boar providing both food and shelter (orange areas in the higher risk map). Worth to mention that, in the whole district of Zlin, crops have not yet been harvested.
In the fenced area, during the period 21 June – 9 October 2017, 151 wild boar carcasses have been found of which 112 tested ASF virus positive (74,2%). 39 dead animals have been tested on ASF and CSF negative. 8 of the dead virus positive animals were also ASFV antibodies positive (IPT test). The high number of dead negative animals (10-15% of the initial wild boar population estimate) is explained by the disrupted social structure of the local wild boar population induced by the virus lethality; animals could have lost their leading guides and with them the capacity to find shelters, food etc. In addition most of the negative dead wild boar were young animals which died in car or train incidents or only bones and skin were delivered for ASF testing.

2) High risk sub-area

The size of the area is 160 km^2. The area is a buffer zone around the higher risk sub-area (fenced area) and has been calculated considering the maximum annual increase of the home ranges of the wild boar living in the fenced area (see figure below).

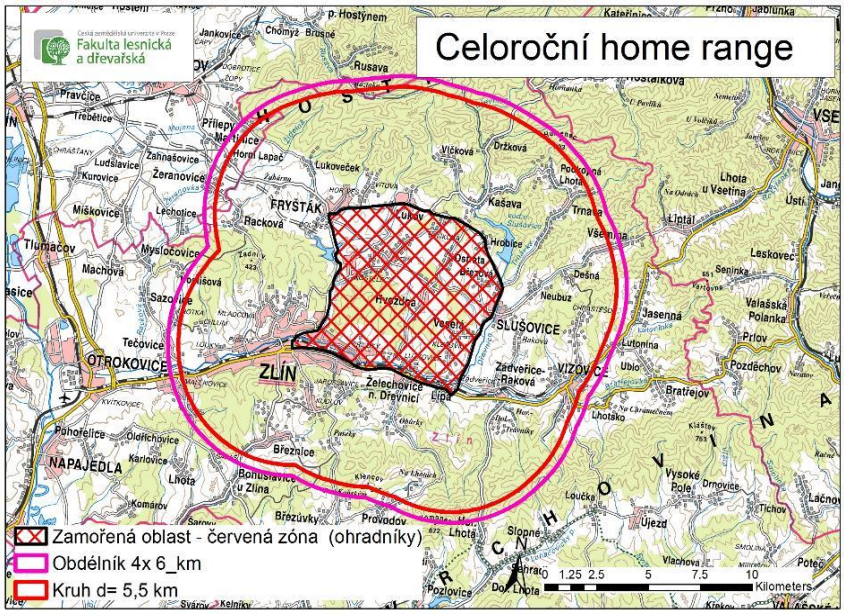

Figure 3: The higher risk area (red grit) surrounded by the perimeter of the wild boar maximum home rage size;

Starting from 11 September 2017, individual hunting from advantage points is allowed (driven hunts still forbidden). No more than 3 teams of local hunters are allowed to hunt at the same time in each hunting ground; in addition *ad hoc* Police sharpshooters (snipers) are employed for high-risk zone; they are split in 8 teams of two men shooting wild boar at three days interval.
All shot wild boar are collected, safely transported to the nearest road and then sampled at the rendering plant. From 11 September to 9 October 44 animals have been shot and tested ASF negative.
21 animals were trapped and one of them was ASF virus and antibody positive.

At the date of the mission, the last positive case was detected on 29 September and the actual wild boar population was estimated to count about 100 animals. About 40 wild boars were sighted on 15 October from a helicopter using infrared camera.

3) Low risk sub-area

It is the whole infected area (green part in figure 1) excluded the red high and higher risk areas.
The area is 874 km^2 large. All found dead and hunted animals are collect under biosecurity measures, ear tagged, transported into specific wild boar collection centres, dispatched with authorised vehicles to a rendering plant where they were sampled by an official veterinarian and then disposed. In the area, 92 dead wild boars have been found and none of them was ASF positive. Until the date of 9 October 2017, 760 wild boars were hunted and none of them was tested ASF positive.

4) Intensive hunting area: (yellow area in figure 1)

It is about 8500 km^2 large bordering the infected area. In the intensive hunting area the wild boar management is aiming to reduce the population size. All shot wild boar are tested for CSF and ASF. Till 13 October 2017, 5305 animals have been shot and tested negative. No restrictions are foreseen for wild boar and domestic pigs.

DOMESTIC PIGS

In the wild boar infected area there are 14.810 domestic pigs distributed in 22 commercial farms. Four farms have more than 2.500 pigs, 16 less than 30. The exact number of the back yard farms with only one pig is available at municipality level but apparently not all these farms are included in the regional Veterinary database.
The following measures have been implemented:

1) Official check of farm biosecurity (both commercial and non commercial);
2) Movement control;
3) Ban of feeding with fresh grass;
4) Ban of straw bedding;
5) Enhanced passive surveillance
6) Active surveillance based on random sampling of 30 pigs per commercial farm;

At the date of the mission, 2 ASF suspected cases in domestic pigs have been investigated (6 July and 15 September, in two small farms with 3 and 4 animals respectively). In both cases a single dead animal was reported and ASF could be excluded immediately by the laboratory tests.

❖ Field visit

National Reference Laboratory

The National Reference Laboratory (NRL) is located in Jihlava. It is well staffed and equipped and coordinates also the ASF activities of two other (regional) laboratories. The NRL applies OIE standard methodology and the daily work is performed based on the recommendations of EU RL for ASF. For serology ELISA is used and IPT is implemented as a confirmatory test. For virus detection PCR tests are performed, but not virus isolation on cell culture. The samples are tested same day and the laboratory works also on Saturday.
The identification of the wild boar samples is based on the hunting system; the Number of hunting licence accompanies the sample. Although the cover letters for ASF samples have columns for

indicating sex and age, these data were often missing.
The NRL and regional laboratories use identical data registration and processing systems for ASF samples and test results, however the NRL has no direct access to the data of the regional laboratories.
At the NRL, the team received contrasting information in respect to the information received from the Central and Regional Veterinary Authorities and in particular: a) no samples have been tested from domestic pigs since the beginning of the first case; b) no active surveillance is carried out in domestic pig holdings. The Competent Authority explained that contrasting information results from the on-going process of the new electronic data transfer procedure and its adaptation to the current ASF surveillance strategy. The reviewed process will ensure the complete reliability of the data.

Commercial farm
The team visited a commercial pig farm the infected area. The farm raises 250 sows and 1500 fattening pigs with a standard mortality of 2-3%. No pigs were tested for ASF during the past 3 months. The farm is fenced and only industrially processed feed is used. Animal by-products (dead pigs) are delivered in to the special designated container and the vehicle of rendering plant, while collecting dead animals, does not enter in the farm perimeter. However, during the visit, the team noticed some pigs outdoor together with an improvable quality of disinfection barrier at the entrance gate. The employees, the transport of live pigs and feed are all using the same gate without any real separation between „clean“ and „dirty“ area on the farm territory.
During the visit the Regional veterinary authority confirmed the lack of fixed inspection frequency for both commercial and non-commercial pig farms in the infected area.

Non-commercial farm
The team visited a non-commercial holding with one indoor fattening pig. The team noticed that owner did not use protective clothing and separate boots to enter in the shed. Swill feeding was also confirmed as well as home slaughter with no veterinary supervision. The owner visits regularly the near infected forest to collect mushrooms and berries.

High-risk wild boar infected area
The team visited the higher risk area (fenced area). One collection point for hunted wild boar was visited as well as one trap in an unharvested maize field. The team could also see how hunted wild boar are packed and deposited at roadsides (see photo) before being collected by the vehicle and transported to the rendering plant.

❖ CONCLUSIONS

The veterinary service of the Czech Republic was successful in stopping the geographical spread of ASF through a proper implementation of the very first ASF control measures;

The initial ban of hunting until implementation of proper biosecurity measures, the increased level of passive surveillance and the obligation to render all the animals found dead or hunted in the whole infected area, represented the pillars of the ASF control strategy;

The landscape, where the virus was initially introduced, facilitated the efficiency of the fences (both electrical and odour) in reducing wild boar movements inside the infected area. The fences were installed in short time and are efficiently maintained;

The decision to hunt wild boar in the higher and high-risk areas could disrupt the whole strategy. Due to the short time from the last positive case and due to the started hunting activities, an increased likelihood of virus escaping from the fenced area is foreseen. The team considers that hunting activities have a negative benefit/risk ratio.

The Laboratory ASF diagnostic capability and capacity have a high standard.

The biosecurity measures on commercial farms appear still insufficient to prevent virus introduction, especially if the virus will evolve endemic in the surrounding habitat;

The biosecurity level of the back yard farms is weak and all the typical risk factors linked to the sector are not properly addressed. It also appears that not all the one-pig farms are registered at the Regional Veterinary Office;

The number of ASF tested dead domestic pigs in the infected area is below the expected and observed mortality;

The use of CSF active surveillance samples to also test ASF in domestic healthy pigs has a negligible value in assessing ASF presence.

❖ RECOMMENDATIONS

1) It is recommended to maintain a very high level of passive surveillance in both high risk (red + fenced) and low risk areas as well as in the surrounding unrestricted areas. It is important that hunting activities should not replace active carcass searching. Hunting could also increase the likelihood of the virus to escape from the higher risk area, hence passive surveillance should maintain the same efficiency as during the initial stage of the epidemic, when hunting was prohibited.

2) It is recommended to maintain a very high level of biosecurity during hunting in any part of the infected area. Rendering of shot wild boar has to continue.

3) It is recommended to increase the level of passive surveillance in domestic pigs (both commercial and non commercial) in the wild boar ASF infected area. All dead/sick animals have to be reported to the Veterinary Authorities. Each dead or sick adult animal (sows and boars) has to be tested for ASF. From the group of piglets and fatteners at least two dead animals per week should be tested.

4) To increase the quality level of ASF sample accompanying documents as well as to provide the NRL with full access to the regional laboratory databases.

5) To maintain a high level of awareness; for the domestic pig sector awareness strategy should address ASF early detection and basic biosecurity requirements for both commercial and non-commercial pig farms. Simple, sustainable and efficient biosecurity measures should be provided to the back yard owners within the wild boar infected area.

6) To ensure Veterinary supervision during home slaughter of back yard pigs;

❖ **Final remarks***: The working atmosphere during the mission was very good. The colleagues from the Central Veterinary Office and from the Regional Veterinary Office in Zlin region, region gave all their support and assistance to facilitate a fruitful mission. The SGE team wishes to thank*

all colleagues from Czech Republic for their support and help given. All requested information and explanations were promptly received by the SGE team.
Furthermore the support given by the interpreter, Mr Konstantin Korz was excellent and very professional.

SGE team