

GF-TADs

GLOBAL FRAMEWORK FOR THE
PROGRESSIVE CONTROL OF
TRANSBOUNDARY ANIMAL DISEASES



Food and Agriculture
Organization of the
United Nations



Standing Group of Experts on African swine fever in the Baltics and Eastern Europe Region under the GFTADs

Expert mission on African swine fever in Ukraine REPORT¹

- ❖ **Period:** 14 – 18 September 2015
- ❖ **SGE Experts:** Klaus Depner (team leader, Germany); Silvia Bellini (Italy); Sergei Khomenko (FAO), Vittorio Guberti (Italy)
- ❖ **Time schedule and places visited during the mission:**
 - 14 September: Arrival in Kiev
 - 15 September: Opening meeting in Kiev at the Central Veterinary Administration within the Ministry of Agriculture
Visit of regional veterinary service in Kiev oblast
 - 16 September: Visit of a hunting ground in the Kiev oblast and visit of the Nizhyn district in the Chernihiv oblast
 - 17 September: Visit of the Bahmach district in the Chernihiv oblast and final meeting in Kiev at the Central Veterinary Administration within the Ministry of Agriculture
 - 18 September: Departure from Kiev

On September 15, from 15.00 till 19.00, in order to save time and cope with the tight agenda, the mission split into two working groups, one interpreter per party. One group went to a commercial farm; the other group visited a village affected by ASF. Both interpreters kindly cooperated.

For the detailed agenda see Annex.

- ❖ **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.

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

2. The experts should work with the Veterinary Services in order to determine the following aspects:
 - 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.
 - If ASF is occurring in wild boar and geographical distribution of ASF in wild boar.
 - Formulate hypothesis on the drivers of ASF occurrence for domestic pigs and back yards.
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.

Details concerning the Terms of References and the persons who were met during the mission are in the Annex.

Findings of the mission

General principles of ASF control in Ukraine

The procedures of control and eradication measures for ASF (as well as other transboundary animal diseases) in Ukraine are following the following principles:

- The place where a case or outbreak of ASF has been confirmed is declared as outbreak centre. It can be a back yard holding, or (most often) an entire village, a commercial farm, as well as the place where an infected wild boar has been found. Within the outbreak centre (defined within a range of 3 to 20 km radius) all pigs are culled followed by cleaning and disinfection.
- Around the outbreak centre a protection zone is established. The radius of this zone can vary between 3 and 20 – 30km. All pigs within this zone will be slaughtered, no movement of pigs out or into the zone is allowed. Commercial farms which are located in the protection zone can be excluded from slaughtering.
- Around the protection zone a surveillance zone is established. The radius of this zone can vary between 20 and 150 km. No movement of pigs out or into the zone is allowed without veterinary permission.
- Pigs in the restricted zones (protection and surveillance) are tested only occasionally, but attempted to be clinically checked for ASF at least once in the surrounding villages or farms.
- The quarantine time after an outbreak lasts 40 days after cleaning and disinfection.

Similar measures are applied if ASF is detected in wild boar, the legislation does not differentiate between outbreaks in domestic pigs or cases in wild boar.

ASF in Ukraine

Ukraine has about 7 million of pigs. Half of these pigs are kept in large commercial farms and the other half in back yard holdings. So far 21 ASF outbreaks in domestic pigs and 17 cases in wild boar have been reported in the previous years as follows:

2012: 1 outbreak

2013: 0

2014: 5 outbreaks; 11 cases

2015: 17 outbreaks; 5 cases

The total ASF outbreaks are 39: 21 in domestic pigs, 17 cases in the wild boar and 1 infected site (slaughterhouse).

Most recent outbreaks (end of 2014-2015) and cases occurred in the northern part of the country in different regions (except the outbreak in 2012 and early 2014 which were located in the south-east and east of the country). In most outbreaks and cases neither a geographical nor a timely connection becomes evident. It appears that every time the virus has newly been introduced; no chain of infection has been identified. Chernigov Oblast visited by the Team appears to be most heavily affected by AFS and has highest number of outbreaks and cases (Figure 1).

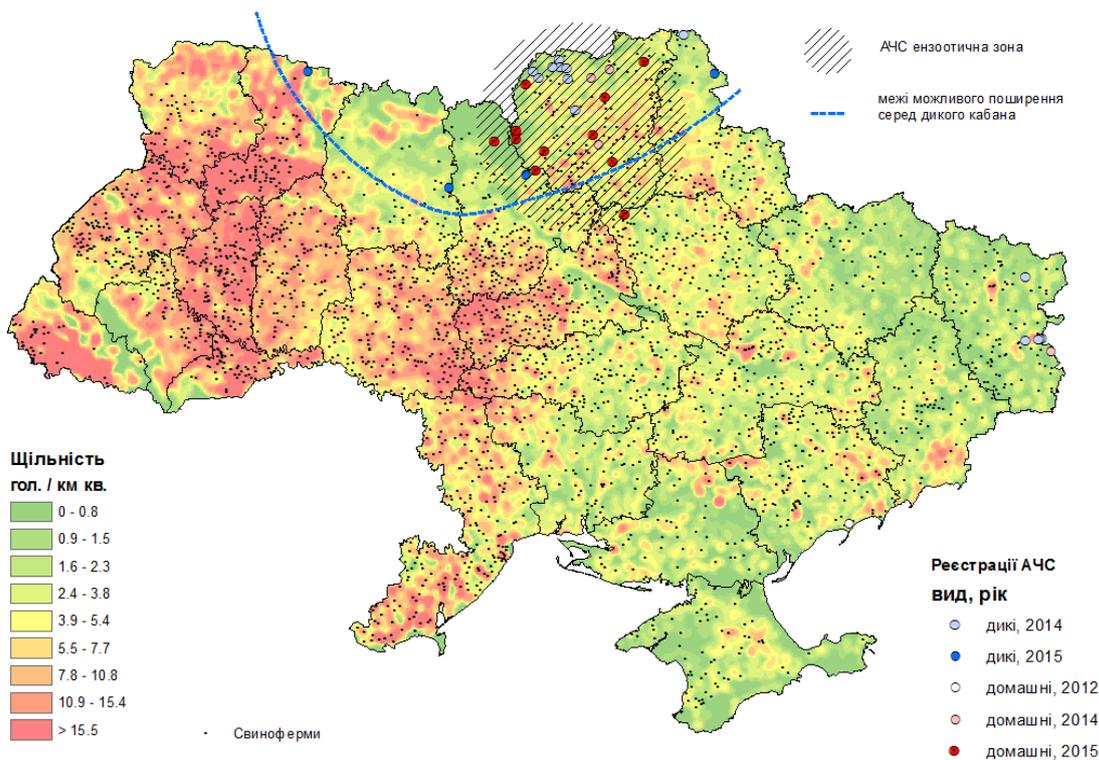


Figure 1. ASF detections in domestic pigs and wild boar (2012- August 2015) overlaying backyard pig population density map and pig farm locations. Blue dotted line marks possible extent of occurrence of ASF in wild boar. Shaded area is most heavily affected Chernigov Oblast.

The ASF affected back yard holding visited by the expert team had two pigs of which only one was infected. It was assumed that the low biosecurity of the holding and human failures were responsible for ASF virus introduction. After notification all pigs in the village (5 pigs) were culled.

A scientific risk assessment (e.g. following OIE guidelines) determining the main ASF risks for domestic pigs and wild boar has not been conducted so far. However, low biosecurity in back yards and human factors are considered to be the main factors for introduction and spreading of ASF. It was stated that wild boar are the main source of infection for domestic pigs, even though, based on the information reported a clear epidemiological link between the two susceptible populations has not been established.

The present ASF surveillance regime for domestic pigs is set up by the central administration. Two samples (blood or spleen) per quarter from each commercial farm are taken randomly. No specific prescriptions on which animals have to be sampled are in place, however sick or dead animals should be targeted. Along the two ASF samples, it is recommended that at least 10% of dead animals should be sampled. The sampling is addressed to a generic check of the health status of the farm. Samples are delivered to the local laboratory and tested for a number of diseases in which ASF is not routinely included. However if ASF is suspected the samples will be tested also for ASF.

In the district visited by the expert team the commercial farms are reporting daily by phone to the local veterinary service the number of death and sick animals. Furthermore weekly and monthly reports are made. All the communication is made by phone; no written reports are made. However, during the past year, due to economical and strategical decisions (no money and no interference with enterprises) the veterinary service was not conducting any inspections on site.

Wild boar management in Ukraine

Ukraine with its estimated 61.549 wild boar (official census dated 28 February 2015) has a rather low average population density. The bulk of the population is concentrated in the most forested Northern and Western Oblasts of the country, while in the South and South-East the population is low and fairly fragmented.

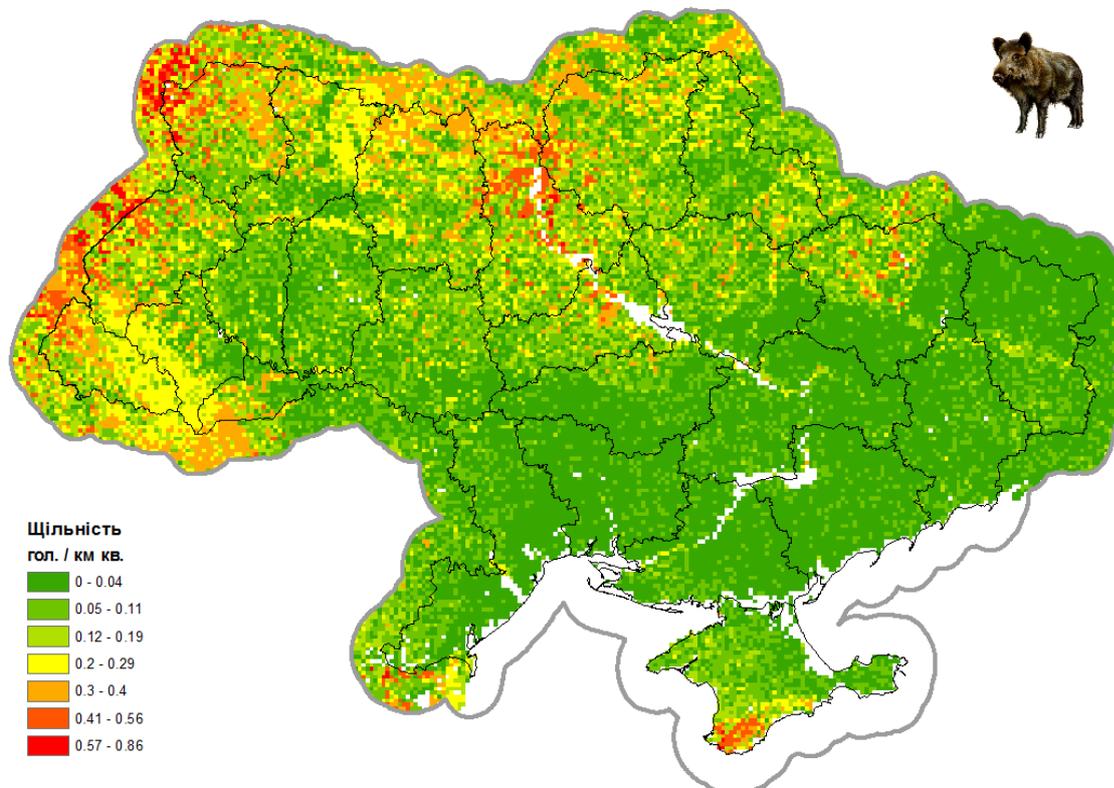


Figure 2. Estimated spring population density of wild boar in Ukraine

The 5 (out of 25) Oblasts currently affected by ASF (Rivnenska, Zhytomyrska, Kyivska, Chernihivska & Sumska) account for 36 % of the whole wild boar population in Ukraine. In the last 15 years wild boar numbers have been steadily increasing from 37.000 in 1999 (beginning of the records) to the

current numbers (e.g. nearly doubled) across most of the regions of the country. Wild boar population census is done using one or more of available methods: driven census with counting individuals, transect count of tracks, counts at feeding locations; very rarely aerial counts. These estimates are usually made in February, following closure of the hunting season for ungulates (November through January). Each hunting ground conducts its own census and reports to the Oblast Forestry authorities and to the national level. This statistics is then used to calculate a hunting ground specific hunting bag.

According to size and habitat characteristics of each hunting ground, a minimum and optimal number of wild boar are determined. Wild boar hunting bag is regulated by State Forestry Committee across all the hunting grounds irrespective of their ownership. No hunting is allowed if population density is below 0.3 head/km² (3/1000 ha). When this threshold is reached, hunters are normally allowed to take no more than the estimated annual increase rate, usually 20-30 % of the population size estimated in February. Since in general over most of the country wild boar population density is below that threshold, only selected hunting grounds are allowed to hunt wild boar. They are mostly found in the North and West of the country or clustered around large cities, where hunting grounds are more often privatized. Overall, before introduction of ASF (2014) the average hunting bag for the whole of Ukraine was about 10 % of the February population estimate and it doubled the 1999 hunting bag that accounted for 5% of the whole population. At the regional (Oblast) level average hunting bag ranges from 2.9 % (Kherson Oblast, South Ukraine) to 22-24 % (Kiev City and Kiev Oblast, North Ukraine), reflecting higher productivity and survival rates (likely an effect of management interventions) of the populations.

A proportion of hunting grounds have been privatized (either by a single persons or by hunting clubs), while the remaining areas are owned and managed by the state and NGOs (usually the local members of Ukrainian Hunting and Fishing Association). Such a situation results in evident differences in several management activities including reliability of censuses, artificial winter-feeding strategies, collection of the hunting bag data etc., and finally in ASF surveillance.

The expert team visited during the mission the Oshytky hunting ground which is privately managed. The hunting ground has a surface of 11.300 ha and is located in the oblast of Kyiiv. Wild boar census is carried out using a helicopter, usually during February. 162 wild boar have been counted, but a stable population of about 200 individuals is estimated for the area. The minimum and optimal wild boar population size has been officially set respectively at 27 and 44 animals with a 30% of annual growth. Winter-feeding is a part of the management; 80 tons/ year of cereals and hay are distributed in 20 feeding points and available to all the ungulates of the ground. Winter-feeding is aimed in increasing both winter survival and population growth rates, the latter is estimated at about 75-80% year, higher than the official one (30%). Discrepancies between the official and the effective wild boar population demographic parameters are evident. In peacetime, 26% of the population could be hunted with no prescription regarding the age and gender classes' composition of the hunting bag. Due to the recent ASF occurrence in the oblast, the ad hoc ASF Commission has requested a depopulation of the wild boar, aimed in reducing 80% the post-reproductive population (estimated with a 30% growth); 125 out of the 162 wild boars should be shot during the period August-November 2015. At the date of July 16th 2015, 73 wild boars have been shot, 36 of them were tested and proved to be negative for ASF virus. All the shot animals have been burned and buried locally under the supervision of the Veterinary Service. During the past three years not a single dead wild boar has been found/reported. The manager of the hunting ground is aware that each found dead wild boar should be reported to the veterinary competent authorities.

Since all hunted animals are disposed, no specific biosecurity measures are in place during dressing and processing the meat.

ASF in wild boar

Following introduction of ASF to Chernigov Oblast in mid-2014 and detection of a cluster of cases in wild boar, Ukrainian Veterinary Authority urged for depopulation of wild boar in the affected districts. Further detections of 4 more ASF cases in wild boar (scattered over 5 northern Oblasts of Ukraine) in 2015 and simultaneous rapid increase of outbreaks in domestic pigs, including large commercial holdings prompted the decision to depopulate all those affected Oblasts from wild boar as much as possible. For this, very high hunting quotas for each hunting ground have been prescribed (see the above data for the visited hunting ground) by the State Forestry Agency as soon as the Oblast or national Anti-Epizootic Commission decided to put these measures in place. Therefore, in different parts of the affected Oblasts start of the depopulation activities ranged from October 2014 (Chernigov) to August 2015 (Rivne, Sumy Oblast).

A quick overview of the results of depopulation suggests that very little progress has been made and so far hunting pressure remained to be within normal seasonal quotas. Most successful depopulation was in Kiev Oblast, largely because densities are higher, there are more staff and resources available and hunting management system is in place (feeding grounds, hunting towers, etc.). Depopulation seems to work better at the private hunting grounds; while outside of them specially organized teams (representing hunters from different state agencies) are employed. It is expected that actual hunting bags will increase more during the cold part of the year, at present only 18% of the expected hunting bag has been reached.

Although declared to be in place, ASF passive surveillance in wild boar does not seem to be systematic and to follow any strategy. All primary cases of ASF in wild boar in 2014-2015 were detected through opportunistic passive surveillance. All cases in 2015 were isolated cases with no further detection of infected wild boar carcasses nearby. Unfortunately, decision has been made to stop testing wild boar killed in the process of depopulation in the affected Oblasts of the country. In the absence of carcass detection effort and lack of active surveillance scheme for wild boar the real epidemiological situation of ASF in wild boar cannot be assessed quantitatively and remains to be rather obscure. For these reasons, at the moment it is not clear if the virus became endemic in wild boar populations in the same way it happened in the Baltic States and Poland, or detected cases are isolated spill-overs from domestic pigs.

CONCLUSIONS & RECOMMENDATIONS

In case of an ASF outbreak the veterinary service reacts promptly and immediate measures are taken. Furthermore the veterinary service is linked with other state bodies involved in disease control and eradication (e.g. police, local administrations, state hunting associations, etc.).

The pig commercial holding visited by the team has a good level of biosecurity.

However, some essential improvement is needed in the area of surveillance, (tracing and control activities during the outbreak) and risk based prevention. So far the monitoring and surveillance activities are not taking into account the epidemiological particularities and regional risks factors posed by ASF.

The surveillance activities are not based on scientific grounds, which take into considerations the biology of ASF. Therefore, the monitoring and surveillance data for domestic pigs and wild boar do not reflect the real epidemiological situation in Ukraine.

The surveillance plan conducted at present (2 samples per holding per quarter) is one of the weakest points. Under such premises ASF virus may only be detected if at least half of the district in a specific trimester will be infected.

It is strongly recommended that an independent expert group should be established to assist the Central and Regional Veterinary Authorities in the design of the relevant surveillance activities. The group should consist of epidemiologists, risk assessors, laboratory experts and wildlife experts. On the basis of the epidemiological situation and a properly conducted risk assessment following OIE guidelines, the group should define the appropriate:

- measures of surveillance/control;
- sampling scheme;
- testing regime for clinical and laboratory examinations.

It is strongly recommended that a scientifically based ASF risk assessment following OIE guidelines should be performed. The risk assessment should focus on: (i) possible risks of ASF virus spread, (ii) the best management options for domestic pigs and wild boar, both in infected areas and in the bordering risk areas, (iii) the suitability, effectiveness and the practical aspects of implementation of the main measures.

The advising scientific group should evaluate the epidemiological findings and laboratory results on a monthly basis. The proportionality and effectiveness of measures should be checked continuously.

The surveillance and monitoring activities should be based on the biological characteristics of ASF. Surveillance in domestic pigs should be focused on ASF early detection and thus considering sick/dead animals avoiding planning in advance the number of animals to be tested. In this regard risk areas should be defined based on a risk assessment and when active surveillance is in place a representative number of animals should be tested considering that any sampling strategy (i.e. 5/95%) cannot be stratified in time (trimesters) without losing its expected detecting capacity.

The present level of active surveillance is so low that early detected of ASF will fail. It would be more profitable if active surveillance could be replaced by passive surveillance triggered by the report of dead animals (backyard sector) and evident changes in the health status of pigs on commercial farms.

For wild boar passive surveillance (dead animals) should be enhanced in both infected and risk areas while maintaining the actual level of active surveillance (shooting for monitoring). Regarding wild boar passive surveillance has been proved to increase 50 times the likelihood of virus detection. It is recommended to increase the level of passive surveillance in areas at risk and to test virologically (PCR, IFT) all the wild boar shot in infected areas.

A better sampling regime for domestic pigs and wild boar based on scientific grounds aiming of improving ASF prevention efforts does not necessarily imply that more tests have to be conducted. Important is to test a representative number of relevant animals in due time.

The proportionality and effectiveness of the eradication measures conducted within the protection and surveillance zones should be re-evaluated taking into consideration the epidemiological particularities of ASF as well as risk patterns.

ASF training courses for veterinary inspectors at regional level following OIE guidelines are recommended. In particular the epidemiological aspects of the disease should be discussed and elaborated in particular focussing on early detection and prevention.

Final remark: *The working atmosphere during the mission was very good. The colleagues from Ukraine gave all their support and assistance to facilitate a fruitful mission. The SGE team wishes to thank all colleagues from Ukraine for their support and help given. All requested information and explanations were promptly received by the SGE team.*

SGE team

09.10.2015

Annex 1

Template for on the spot visits in Lithuania – Belarus – Poland – Russian Federation – Latvia - Ukraine – Estonia

The visit should include at least two separate field visits in two separate locations. In each of these locations the following aspects should be covered:

- Visit a local veterinary office dealing with field work for a discussion with the official veterinarians dealing with the pig sector. Figures should be provided to the experts on local pig production on both industrial and backyard farms together with biosecurity practices and an overview of activities by the veterinary services.
- Visit of 2 or 3 medium to large pig farms (without entering the premises, so just seeing the farm from the outside for biosecurity reasons) and discussion with the farm owner/manager outside the farm or in the administrative premises.
- Visit to 1 or 2 hunting grounds in the infected area and discussion with forestry management officials as well as one or two representatives from local hunting associations.

In addition to the above, a short opening and closing meeting with the central veterinary services should be foreseen so to allow discussing national practices and recommendations. Data should be provided to the experts on national biosecurity measures, population estimates, regionalisation, and surveillance being carried out in both domestic and wild boar.

In order to facilitate the mission, the following information should be provided to the experts, possibly one week before the mission:

- Domestic pig data:
 - Pig population and its structure
 - ASF situation
 - What kind of surveillance is applied, and results
 - Control measures adopted to mitigate the risk of spread (domestic and backyards), and results.
- Wild boar management in the country:
 - A map of the hunting grounds
 - ASF in wild boars eradication/control strategy applied for 2014/2015 and what will be planned for 2015/2016
 - Efficiency of surveillance
 - Country self-evaluation of the strategy applied
 - Problems encountered
- Wild boar data for specific hunting grounds:
 - Applied biosecurity measures when hunting;
 - Sampling procedures
 - Wild boar estimates and hunting bag planning and achievement (how many in reality have been shot)

Annex 2
**Programme of the GF-TADs mission on ASF in Ukraine
(14-17.09.2015)**

№	Object	Time	
14.09.2015			
Arrival of experts			
15.09.2015			
1	Opening meeting of experts with Deputy Head of Derzvetphytosluzhba of Ukraine Visit of the Main Administration of Veterinary Medicine in Kyiv region. Assessment of organization of work on ASF prevention and elimination in Kyiv region.	09:00-10:00	
2	Travel to LLC "Nyva Pereyaslavshchyny" Pereyaslavske village, Pereyaslav-Khmelnysk district, Kyiv region	10:00-11:00	
3	Visit of pig farm LLC "Nyva Pereyaslavshchyny"	11:00-12:30	
	Lunch	12:30-13:30	
4	Travel to the not free area - Semenivka village Baryshivka district Kyiv region	13:30-14:30	
5	Assessment of work on ASF elimination in Semenivka village	14:30-16:00	
5	Travel to the hotel (Kyiv city)	16:00-18:00	
16.09.2015			
1	Travel to the hunting ground LLC "Oshytky" Vyshhorod district Kyiv region	09:00-10:00	
2	Visit of the hunting ground LLC "Oshytky"	10:00-11:30	
3	Travel to the Chernihiv region and lunch	11:30-15:00	
4	Work organization on prevention of ASF in Nizhyn district Chernihiv region	15:00-16:30	
5	Travel to Chernihiv city and check-in the hotel	16:30-18:00	
17.09.2015			
1	Travel to the pig breeding farm LLC "CHMK" (Bahmach district Chernihiv region)	09:00-10:30	
2	Visit of the pig breeding farm LLC "CHMK"	10:30-12:00	
	Lunch	12:00-12:45	
3	Travel to the Kyiv city	12:45	
4	Sum up of mission with Deputy Head of Derzvetphytosluzhba	17:00-18:00	

Annex 3
**Persons involved in the discussions during the GF-TAD mission
in Ukraine from 14-18 September 2015**

Name	Function	Organisation
15 September 2015 Opening meeting of experts with Deputy Head of Derzvetphytosluzhba of Ukraine. Visit of the Main Administration of Veterinary Medicine in Kyiv region.		
Olexandr Verzhiovsky	Deputy head	Central Vet Administration - Derzvetphytosluzhba of Ukraine
Matrienko Valdimir Petrovych	Chief epidemiologist	Central Vet Administration - Derzvetphytosluzhba of Ukraine
Matrienko Olena	Deputy head	Regional Vet administration of Kiev oblast
Klymenok Igor	Director	Veterinary Hospital in Kiev Oblast
Olexei Roman	Head	Veterinary Administration of Preyaslav-Kharnelnisky district
Denis Yurkov	Chief Vet	Nyva Pereyaslavshchyny village
16 September 2015 Visit of a hunting ground in the Kiev oblast and visit of the Nizhyn district in the Chernihiv oblast		
Rotayenko Yuri	Head	Veterinary service in Vyshhorod district, Kiev oblast
Satanenko Vyacheslav	Director	Regional Lab Vyshhorod
Chirva Andriy	Director	Hunting ground "LLC Oshytky"
Pavlishen Yuri	Head	Regional Vet administration of Chernihiv oblast
Vaumenko Volodymyr	Head	Veterinary Administration of Nizhyn district in Chernihiv oblast
Fil Oleg	Director	Regional Lab of Nizhyn district
Koshoviy Anatoliy	Director	Regional Vet hospital of Nizhyn district
17 September 2015 Visit of the Bahmach district in the Chernihiv oblast and final meeting in Kiev at the Central Veterinary Administration		
Zayets Mykola	Director	Regional Vet hospital of Bahmach district
Coriliy Petro	Head	Veterinary Administration of Bahmach district
Kamelek Stanislav	Director	Chernigev meat company
Andriy Valadymirovych	Deputy head	Department of hunting grounds (Forest agency)
Olexandr Verzhiovsky	Deputy head	Central Vet Administration - Derzvetphytosluzhba of Ukraine