



FAO activities on African swine fever

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Regional African Swine Fever (ASF) Wild Boar Management Workshop

Belgrade, Serbia, 21-23 May 2019

FAO's vision

A world free from hunger and malnutrition



Achieving food security for all is at the heart of FAO's efforts – to make sure people have regular access to enough high-quality food to lead active, healthy lives.

Our mandate is to improve nutrition, increase agricultural productivity, raise the standard of living in rural populations and contribute to global economic growth.



Priorities / Larger Frameworks



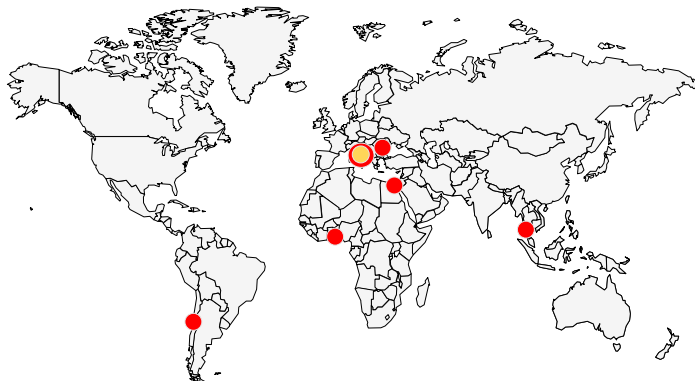
1. Eliminate hunger, food insecurity, malnutrition
2. Make agriculture more productive and sustainable
3. Reduce rural poverty
4. Enable inclusive and efficient agricultural and food systems
5. Resilience to disasters



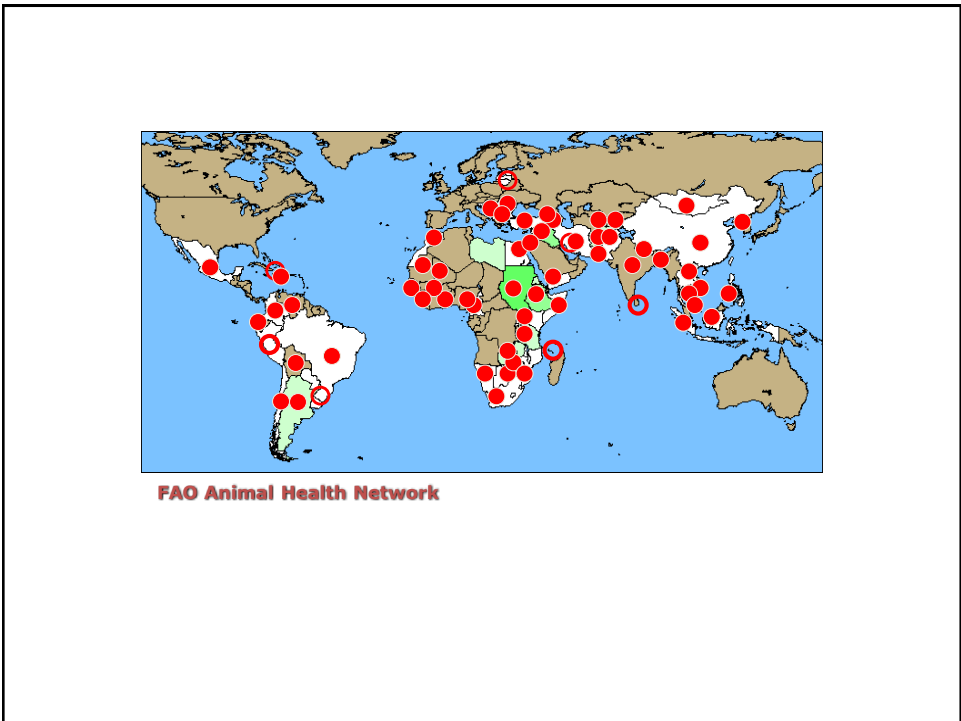
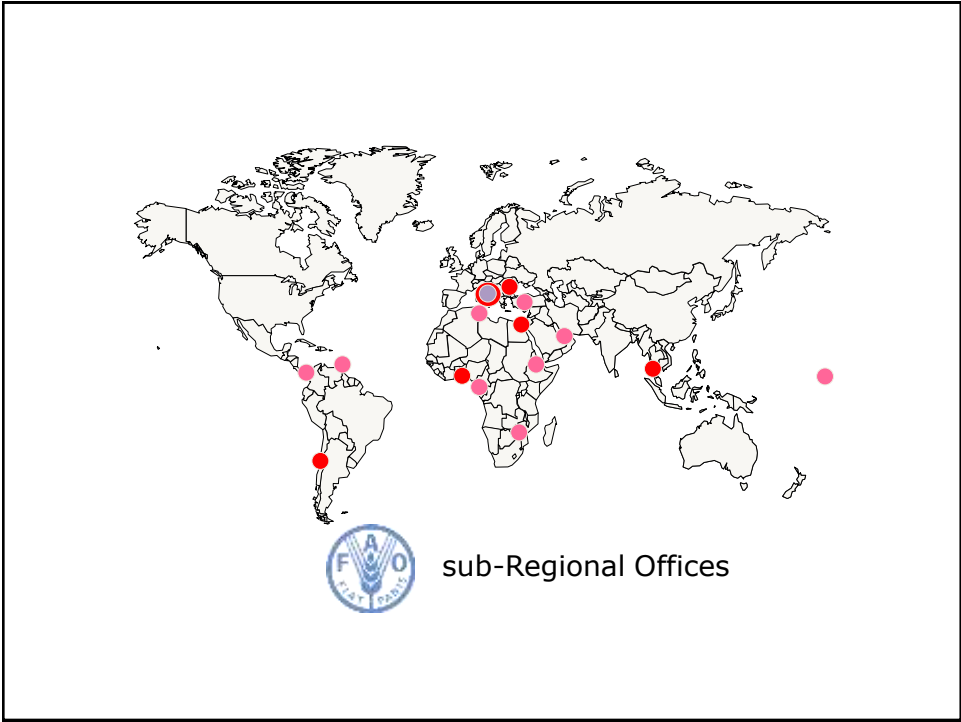
UN Sustainable Development Goals 2030



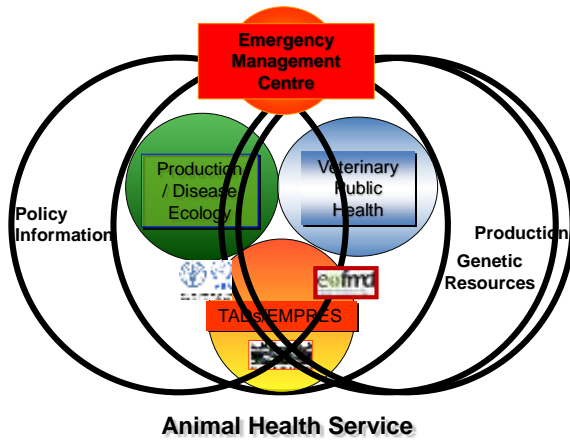
Global Health Security Agenda



HQ and Regional Offices



Animal Production and Health at FAO



FAO Reference Centers

Overall collaborative framework



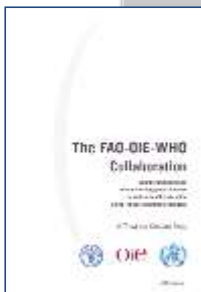
Global leader for
food and
agriculture



Global leader for
animal health and
welfare standards



Global leader for
human health



Tripartite agreement
Collaborations
Joint priorities since 2010, including AMR, Rabies and
Zoonotic Influenza

FAO-OIE-WHO Global Early Warning System (GLEWS)

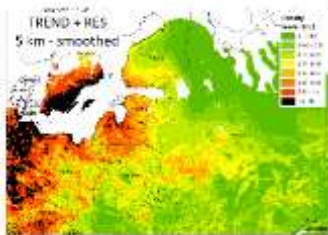


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GF-TADs
GLOBAL FRAMEWORK FOR THE
PROGRESSIVE CONTROL OF
TRANSBOUNDARY ANIMAL DISEASES

The GF-TADs logo features a stylized diamond shape divided into blue and red halves. Below the logo are the logos for the World Health Organization (WHO) and the World Organisation for Animal Health (OIE). The bottom section of the slide contains a collage of images showing various animals: a camel, a dog, a horse, a bird in flight, and a water buffalo.

- Close monitoring (EMPRES-i)
- Regional Approach - Regional response plan
- Risk assessment for at risk countries
- Information sharing: lessons learnt and best practices
- Foster cooperation of all stakeholders: farmers, traders, processors, veterinarians, wild life actors (hunters, forestry), etc.
- Raising awareness
- Harmonization of preventive and control measures
- Piloting new approaches for risk mitigation and outbreak control



Activities on African swine fever



TCP/ARM/3102 (NTE: 2009-12-31 00:00:00, LTU: AGAH) - Emergency Assistance for the Control of ASF	\$ 436,865
TCP/ARM/3205 (NTE: 2010-11-30 00:00:00, LTU: AGAH) - Emergency Assistance for the Control of ASF - Phase II of TCP/ARM/3102	\$ 60,689
TCP/AZE/3201 BABY01 (NTE: 2010-12-31 00:00:00, LTU: AGAH) - Assessment of ASF situation	\$ 8,244
TCP/BRA/0105 (NTE: 1981-06-15 00:00:00, LTU: n.a.) - Assistance for the Eradication of ASF	\$ 29,000
TCP/BRA/8801 (NTE: 1979-08-31 00:00:00, LTU: n.a.) - Support to the Eradication of ASF	\$ 135,000
TCP/BYE/3401 (NTE: 2015-12-31 00:00:00, LTU: AGAH) - Emergency assistance to control the ASF outbreak in Belarus	\$ 420,000
TCP/CPR/3501 (NTE: 2015-12-31 00:00:00, LTU: AGAH) - Developing Prevention and Control Strategies for ASF in China	\$ 380,000
TCP/DOM/8802 (NTE: 1979-08-31 00:00:00, LTU: n.a.) - ASF	\$ 137,500
TCP/GAM/0065 (NTE: 2002-07-31 00:00:00, LTU: AGAH) - Emergency Eradication of ASF and Enhanc. of Logistical and Technical Capacities-Dept. of Livestock Serv.	\$ 13,394
TCP/GAM/9065 (NTE: 2001-05-31 00:00:00, LTU: AGAH) - Emergency Eradication of ASF and Enhanc. of Logistical and Technical Capacities-Dept. of Livestock Serv. (recoded from TCP/GAM/0065)	\$ 200,547
TCP/GEO/3103 (NTE: 2009-12-31 00:00:00, LTU: AGAH) - Emergency Assistance for the Control of ASF	\$ 404,884
TCP/GEO/3202 (NTE: 2011-12-31 00:00:00, LTU: AGAH) - Emergency assistance for the control of ASF - Phase II of TCP/GEO/3103	\$ 89,220
TCP/GHA/8925 (NTE: 2001-08-01 00:00:00, LTU: AGAH) - Emergency Assistance to Eradicate ASF from Ghana	\$ 265,284
TCP/KEN/6612 (NTE: 1998-05-01 00:00:00, LTU: AGA) - Strengthening the Laboratory Diagnosis of ASF	\$ 160,000
TCP/MAT/8801 (NTE: 1978-12-31 00:00:00, LTU: AGA) - Emergency Assistance to Control ASF	\$ 80,000
TCP/MOZ/3102 (NTE: 2008-10-31 00:00:00, LTU: AGAH) - Assistance to control ASF	\$ 256,000
TCP/MOZ/4553 (NTE: 1997-09-01 00:00:00, LTU: DDFA) - Control of ASF	\$ 212,500
TCP/RAF/3503 (NTE: 2016-01-31 00:00:00, LTU: RAF) - Finalization of the Regional Strategy and development of a Regional Control Program for ASF in Africa	\$ 112,000
TCP/RAF/7822 (NTE: 1999-09-01 00:00:00, LTU: AGA) - Enhancing Prevention Capacities for Emergency Intervention Against ASF in W. Africa	\$ 388,690
TCP/THA/4406 (NTE: 1985-09-01 00:00:00, LTU: AGA) - Training in Laboratory Diagnosis of ASF	\$ 29,010
TCP/UGA/2906 (NTE: 2005-02-28 00:00:00, LTU: AGAH) - Emergency Assistance to Control ASF Outbreak	\$ 343,073
TCP/UKR/3402 (NTE: 2015-10-30 00:00:00, LTU: AGA) - Capacity development in early detection and response to ASF in Ukraine	\$ 258,000
TF	
OSRO/GLO/201/USA (NTE: 2014-03-31 00:00:00, LTU: AGAHD) - Control of Transboundary Animal Diseases in Africa and a Global Alliance to Combat ASF	\$ 308,949
OSRO/GLO/XXX/USA (NTE: -, LTU: AGAHD) - FAO-USDA collaboration in ASF control and prevention ? Phase I: The creation of a global alliance, starting in Eastern Europe	\$ 421,000
TF/GCP	
GCP/GLO/405/EC (NTE: 2015-09-30 00:00:00, LTU: AGAH) - ASFORCE Targeted research effort on ASF	\$ 109,522
GCP/RLA/071/ITA (NTE: 1995-03-01 00:00:00, LTU: AGAH) - Prevention of ASF and Other Diseases	\$ 4,752,762
TF/UTF	
UTF/MAT/006/MAT (NTE: 1996-08-31 00:00:00, LTU: AGAH) - Eradication of ASF and Restocking Pig Farms	\$ 772,460

Regional coordination



GARA - Global ASF Research Alliance

- Launched April 2013
- **Mission:** *To establish and sustain global research partnerships that will generate scientific knowledge and tools to contribute to the successful prevention, control and where feasible, eradication of ASF*
- Technical groups: Virology/Immunology, Vaccines, Diagnosis, Epidemiology
- Open membership
- 3 meetings so far:
 - March 2013, Plum Island, USA
 - November 2014, Pretoria, RSA
 - September 2016, Ploufragan, France
 - April 2018, Cagliari, Italy
- Updates and gap analysis ([2018](#))
- <http://www.ars.usda.gov/GARA/>



African Swine Fever (ASF) Public Outreach Regional Project: Kickoff Workshop • Yerevan, Armenia • 1-5 February 2015



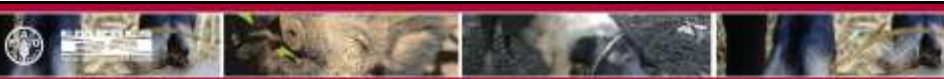
Coordination in Europe – 1st some *Ad hoc* meetings

- 3-4 Feb 2011, EU-FMD & GFTADs, Budapest, Hungary: **1st Veterinary Forum for South East Europe**
- 21-23 Mar 2011, Kyiv, Ukraine: ***Cross-border cooperation between veterinary services (Russian Federation and Ukraine) for ASF control and prevention***
- 4-5 Dec 2012, Budapest, Hungary: ***Threat of ASF spread in Eastern Europe: Urgent need for international collaboration*** under GF-TADs Europe
- 22 Sept 2014, Bern Switzerland - ***Standing Group of Experts on African swine fever in the Baltic and Eastern Europe Region***



Standing Group of Experts on ASF in Europe (SGE ASF)

- http://web.oie.int/RR-Europe/eng/Regprog/en_GF_TADS%20-%20Standing%20Group%20ASF.htm
- Since 2014
- Under the GF-TADs
- Comprises decision makers, experts, EC, OIE and FAO
- Main objective is to strengthen mid-term regional cooperation through:
 - Regular exchange of information on ASF situation and control measures
 - Regular review of national control strategies with a view to harmonize control policies and building a regional control strategy
 - Collaboration on lab diagnostics
 - Collaboration on awareness raising campaigns in affected countries
- Thematic meetings every few months (12 so far)



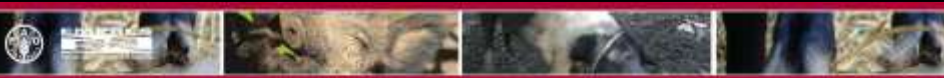
Emergency Management Centre for Animal Health (EMC-AH)

Mandate: Provide **Rapid response** to TADs and emerging animal disease (EIDs) threats



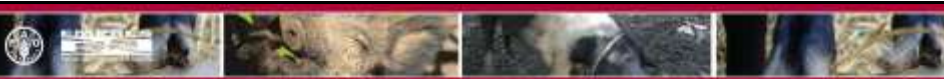
When EMC deploys

- Newly infected country
- Country at high risk of infection
- Country affected by significant epidemiologic change
- Upon government request

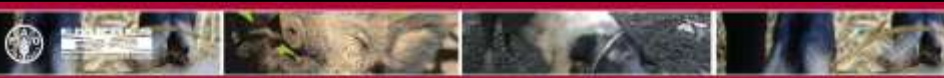


FAO Rapid Assessment missions on ASF

- **CMC rapid missions**
 - Joint FAO/OIE/EC to Georgia (June 2007)
 - Joint FAO/OIE/EC to Armenia (September 2007)
 - FAO/OIE to Belarus (May 2010)
 - FAO/OIE to Tanzania (November 2011)
 - FAO to Côte d'Ivoire (October 2014)
 - FAO to Mongolia (February 2019)
 - FAO to Myanmar (February 2019)
 - FAO to Viet Nam (March 2019)
- **EMPRES assessment mission** to Ukraine (July 2010)

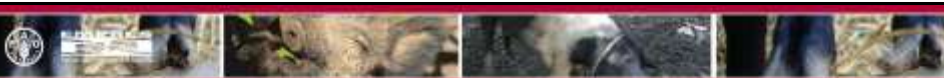


Development projects



Technical Cooperation programs (TCPs)

- 1-2 years
- ≈ USD 300,000-500,000
- Most common activities:
 - Trainings
 - Purchase of equipment
 - Awareness (leaflets/booklets)
 - Surveillance
 - Small research projects
 - Legislation and regulatory issues
 - Decision support tools
 - Simulation exercises
 - Information systems



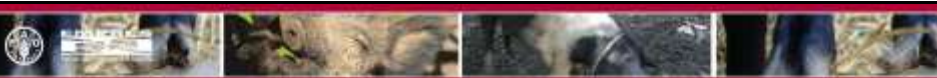
Technical Cooperation programs (TCPs)

Finalized:

- National TCPs: Georgia, Armenia, China, Ukraine, Belarus
- TCPf: Moldova (2016-17)

Ongoing:

- Emergency Regional TCP in the Balkans (2018-2020)
- Regional TCP in South-East Asia
- TCPf Kosovo (2019-2021)



EBRD/FAO project ASF: Risk Awareness Raising and Risk Mitigation in Ukraine – phase 1 (2015-2016)

- Improving (national & sub-national) contingency plans:
 - 6 regional simulation exercises in Kyiv, Poltava, Zhytomyr, Lutsk, Kharkiv and Dnipropetrovsk
- Strengthening the laboratory diagnostic capacity
- Improving knowledge and awareness of local veterinarians
- Raising awareness of farmers on ASF - awareness materials and training for mass media experts



EBRD/FAO project ASF: Risk Awareness Raising and Risk Mitigation in Ukraine – phase 2 (2017-2018)

- 1. Enhancing ASF surveillance capacity locally**
 - ✓ Strengthened monitoring in endemic areas
 - ✓ Capacity development of lab diagnostics (equipment, kits, training)
 - ✓ Hands-on training/field visits on sampling and biosecurity measures for at least 150 veterinary students graduates of universities
- 2. Strengthening private sector resilience to ASF-related risks**
 - ✓ Recommendations on zoning and compartmentalization for the purpose of surveillance, prevention, control, and pork trade
 - ✓ Continue the dialogue with the private sector, the government and national veterinary authorities with a focus on promoting public-private compensation schemes, contingency planning and compartmentalization, etc.
 - ✓ Six capacity-development events – training and simulation exercises 2017-2018
 - ✓ Provide recommendations on potential preventive measures such as pig substitutions schemes to help mitigate negative socioeconomic effects of ASF outbreak/spread
- 3. Awareness-raising with local media and rural communities**



Past ad-hoc capacity building efforts

- **Epidemiology Trainings:** Ukraine: (May 2009; > 50 participants); and Belarus (May 2009; > 20 participants)
- **Lab Trainings:** Ukraine (March 2010; 16 diagnosticians from Belarus, Moldova and Ukraine); and Kazakhstan (with CISA-INIA; Sept 2013; 10 participants)
- **Collection & identification of *Ornithodoros* ticks:** Georgia, June 2013 (with CIRAD): 10 participants from Georgia (2), Armenia (1), Kazakhstan (1), Russia (2), Bulgaria (2), and Ukraine (1)
- **Epi & Diagnosis:** Italy, Nov 2013 (with IZS-UM): 9 participants from Georgia (1), Armenia (2), Belarus (2), Russia (1), Moldova (1), Ukraine (2) and Serbia (1)
- **Contribute to EC's BTSF GF-TADS workshops**

The slide features three photographs on the right side. The top photo shows a man in a green shirt examining a dog's head. The middle photo shows a group of people in a laboratory setting, with one person in a blue lab coat. The bottom photo shows a group of people in a meeting room, with one person in a white lab coat.



Training on ASF management in wild boar (1)

- <http://www.fao.org/europe/events/detail-events/en/c/1051367>
- Kaunas, Vilnius, 22-23 Nov 2017
- Participants: Belarus, Moldova, Ukraine, Bulgaria, Estonia, Germany, Hungary, Latvia and Lithuania, FAO, OIE, DG SANTE, and FACE
- Day 1 - Technical presentations
- Day 2 - Field day at a hunting ground.



Dissemination, awareness & publications




Early warnings and assessments:



- 2007 - ASF in Georgia - http://www.fao.org/docs/eims/upload/230205/EW_ASF_Georgia_Jun07.pdf
- 2008 - ASF in the Caucasus - <ftp://ftp.fao.org/docrep/fao/011/aj214e/aj214e00.pdf>
- 2009 - ASF spread in the Russian Federation and the risk for the region <ftp://ftp.fao.org/docrep/fao/012/ak718e/ak718e00.pdf>
- 2010 - FAO takes a close look at the threat of ASF introduction into Eastern Europe <http://www.fao.org/docrep/013/i1958e/i1958e00.pdf>
- 2012 - ASF recent developments - timely updates <http://www.fao.org/docrep/016/ap372e/ap372e.pdf>
- 2013 - ASF in the Russian Federation: risk factors for Europe and beyond <http://www.fao.org/docrep/018/aq240e/aq240e.pdf>

- In October 2018 and again in February 2019, FAO Chief Veterinary Officer sent a message to CVOs in the region and throughout the world encouraging preparedness and vigilance [[reference](#)].



Awareness materials

- <http://www.fao.org/index.php?id=94206>
- Fully editable format (PowerPoint) that allows to quickly adapt, translate, add logos, change pictures, etc. when faced with an animal health emergency.
- The leaflets are now available in English, plus some other languages online.
- Additional languages and formats (e.g. posters and videos) will be uploaded as they become available.

What can hunters do to prevent the spread of the disease?

In at risk areas, hunters should look out for dead or sick wild boar and notify immediately to [ENTER TELEPHONE NUMBER]. Each dead wild boar should be reported and ASF ruled out by laboratory diagnostic tests.

In affected areas, wild boar products, leftovers and trophies pose a significant risk of being infected. This is why all hunters are required to place particular emphasis on hygiene measures when hunting in affected areas:

- Do not leave any leftovers from the hunted wild boar in the forest.
- Avoid getting in contact with pigs after hunting a wild boar.
- Ensure that the clothes worn, tools and equipment used (e.g. knives, car) that may be contaminated by blood while hunting are cleaned and disinfected and don't get in contact with pigs.

What should people who raise pigs do to protect their pigs?

- Left-overs fed to pigs that may contain meat (i.e. swill feeding) should be boiled before.
- If you notice any clinical signs, including sudden death in your pigs, you should immediately report it to the [ENTER OFFICIAL NAME OF VETERINARY SERVICES].
- Pigs should be kept indoors all the time, not allowing them to come into contact with other pigs or wild boar.
- Buy your pigs from a trusted source and keep them separated from your animals during two weeks (quarantine).
- Avoid unnecessary visitors getting in contact with your pigs.



African swine fever

Is there a vaccine or treatment?

No vaccine. No effective treatment either.

Bringing back meat products from other countries can result in the spread of the disease

To prevent the incursion of ASF and other animal diseases, do not bring back home meat or meat products from other countries, particularly those infected with ASF.

Travelers should always make sure that food waste is only discarded in closely sealed waste containers where pigs and wild boar will have no access.

Go to <http://www.fao.org/3/a-17228e.pdf> for additional information. [CHECK NEXT LINK IF YOU NEED THE MANUAL IN A DIFFERENT LANGUAGE: <http://www.fao.org/documents/card/en/c/bd35c569-752e-4b57-892e-e3e2e0e0c3cf/>]

What is African Swine Fever (ASF)?

African swine fever (ASF) is a contagious viral disease of pigs and wild boar that causes severe economic losses to the pig sector. Originally restricted to Africa, it was introduced into Georgia in 2007, from where it spread westwards (reaching Eastern and Central Europe) and eastwards within Europe. The disease has now been reported in China, seriously threatening countries in East and Southeast Asia.

How is the disease transmitted?

Wild boar and pigs can infect each other by direct contact, particularly when blood is present. Healthy animals can also get infected when they consume undercooked pork products, either while scavenging or when fed uncooked swill. They can also become infected by feeding on infected pork or carcasses, or through contaminated tools and equipment (clothes, needles, vehicles, etc.).



©INRA-CISA/Carmina Gallardo

Cyanosis (bluing) at the tips of ears

Which animals can be affected?

The ASF virus exclusively infects suids, e.g. pigs and wild boar.

What are the clinical signs of the disease?

Infection can cause a wide range of clinical signs. Sick pigs usually die. In the backyard sector, pigs show a lack of appetite followed by sudden death. Rarely other clinical signs are observed. In commercial farms, you may also see depression, weight loss, hemorrhages in the skin (tips of ears, tail, legs, chest and abdomen), lameness and abortion in pregnant sows. Clinical signs may be more difficult to see in wild boar because of their long dark hair.



©INRA-CISA/Carmina Gallardo

Haemorrhagic lymph node

Can humans be infected with the virus?

No.

What causes ASF?

The disease is caused by a virus that is very resistant and can survive for long periods, even months, in feces, meat products (frozen, salted and smoked or undercooked), and carcasses of dead animals. The virus, however, can be killed with several disinfectants such as 1% formaldehyde, 2% NaOH or parphenylphenolic disinfectants.



©INRA-CISA/Carmina Gallardo

Bloody diarrhoea and distinct hyperaemic (red) areas on skin of neck, chest and extremities


What causes ASF?

What are the clinical signs of the disease?






©INRA-CISA/Carmina Gallardo

Enlarged spleen



Manuals

- **Good practices for biosecurity in the pig sector** (EN, FR, SP, RU)
<http://www.fao.org/docrep/012/i1435e/i1435e00.pdf>
- **Preparation of ASF contingency plans** (EN, FR, SP, RU, GEO, ARM)
<ftp://ftp.fao.org/docrep/fao/012/i1196e/i1196e00.pdf>
- **Recognizing ASF - A Field manual** (EN, RU, CH, SR, LT) – *Albanian and Macedonian*
<http://www.fao.org/documents/card/en/c/bd35c569-752e-4b57-892e-e3e2e0ee0c9c/>



Handbook on African Swine Fever in wild boar and biosecurity during hunting

- Technical, but practical
- Compendium of information about hunting management, biosecurity and wild boar carcass disposal
- Briefly describes range of practical management and biosecurity measures or interventions.
- Living document,
- [Link](#)



Standing Group of Experts on African swine fever in Europe under the GF-TADs umbrella



Handbook on African Swine Fever in wild boar and biosecurity during hunting

Main authors:
 Vittorio Guberti, Sergei Khomenko, Marius Mavulili, Suzanne Kerba

© FAO Handbook on ASF in wild boar and biosecurity during hunting - version 03/2018/04

ASF Resource website

Agriculture and Consumer Protection Department
Animal Production and Health

FOOD AND AGRICULTURE ORGANIZATION
OF THE UNITED NATIONS
for a world without hunger

HOME ABOUT PROGRAMMES/PROJECTS PARTNERS RESOURCES

PROGRAMME/PROJECTS

Emergency Prevention System for Animal Health (EMPRES-AH)

Transboundary Animal Diseases (TADs)

African swine fever (ASF)

ASF situation updates

Virology

FAO recommendations

FAO actions

Media releases

Documents

Links

African Swine Fever (ASF)

ASF SITUATION UPDATE

Latest news

11/10/18 **FAO works to better understand backyard pig sector, key in the fight against swine fever** (FAO Regional Office for Europe and Central Asia)

07/09/18 **Asian countries warned that deadly African swine fever is 'here to stay' - utmost diligence required to avoid major damage to food security and livelihoods** (FAO Regional Office for Asia and the Pacific)

FAO guidelines

African swine fever (ASF) detection and diagnosis: a manual for veterinarians (2017)

A rapid risk assessment of ASF introduction into China (March 2018)

Training on ASF management in wild boar - presentations of the training in two languages: EN, RU (2017)

The global platform for African swine fever and other important zoonoses of swine (2013)

Good practices for biosecurity in the pig sector

<http://www.fao.org/ag/againfo/programmes/en/empres/ASF/index.html>

Mailing lists

- ASF
- LSD

If you want to be added, email me at:
daniel.beltrancruzo@fao.org

2nd Update on longy skin disease activities at FAO - Message (HTML)

Dear Colleagues,

We would like to update you about the new FAO initiatives to be in place for January 2018 update (see below). Please click in the hyperlinks for further information:

- TAD has started a Technical Cooperation Project (TCP) to address preparedness for LSD in Belarus, Moldova and Ukraine. Activities are expected to start in the coming months.
- FAO has shared copies of the LSD Manual to countries in the Balkans. Additional copies will be shipped to Central Asian and Eastern Europe of risk countries in the coming days.
- A manual on HVT surveillance is now available on-line. RH Valley fever may be the next cattle disease following the steps of LSD into the region.
- FAO organized a Training on participatory epidemiology principles and techniques in Ganyale applied to consultants between September and December 2018, and developed a manual surveillance system, which integrates participatory disease surveillance and current on-going surveillance activities.



Host population mapping/modelling

Wild boar

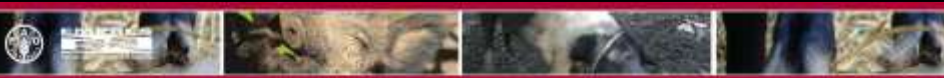
- Wild boar distribution range and densities
- Model now available for the whole of Europe and North Eurasia (5 km resolution)

Domestic pigs

- Low and high biosecurity sectors

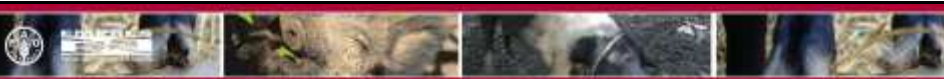
1 KENU = RES
5 km - smoothed

ASFORCE
TARGETED RESEARCH EFFORT
ON AFRICAN SWINE FEVER



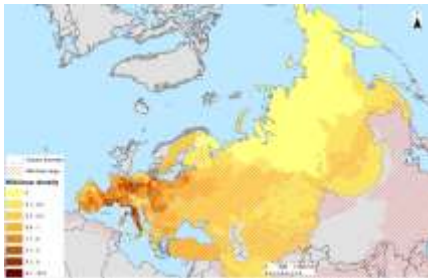
- Pittiglio C, Khomenko S, Beltrán-Alcrudo D. 2018. [Wild boar mapping using population-density statistics: from polygons to high resolution raster maps](#). PloS one. 2018 May 16;13(5):e0193295.

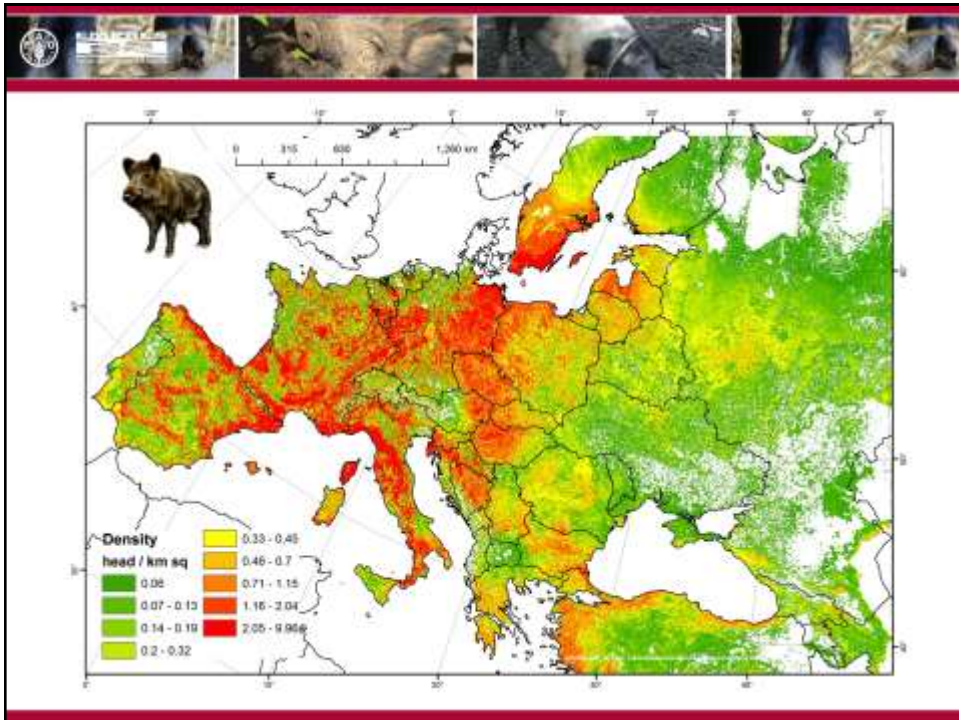
-
- Disaggregate and map wild boar population-density statistics to produce high resolution maps
 - From spatially heterogeneous administrative units (polygons) to high resolution raster maps (5 km)



Materials: WB data and predictors

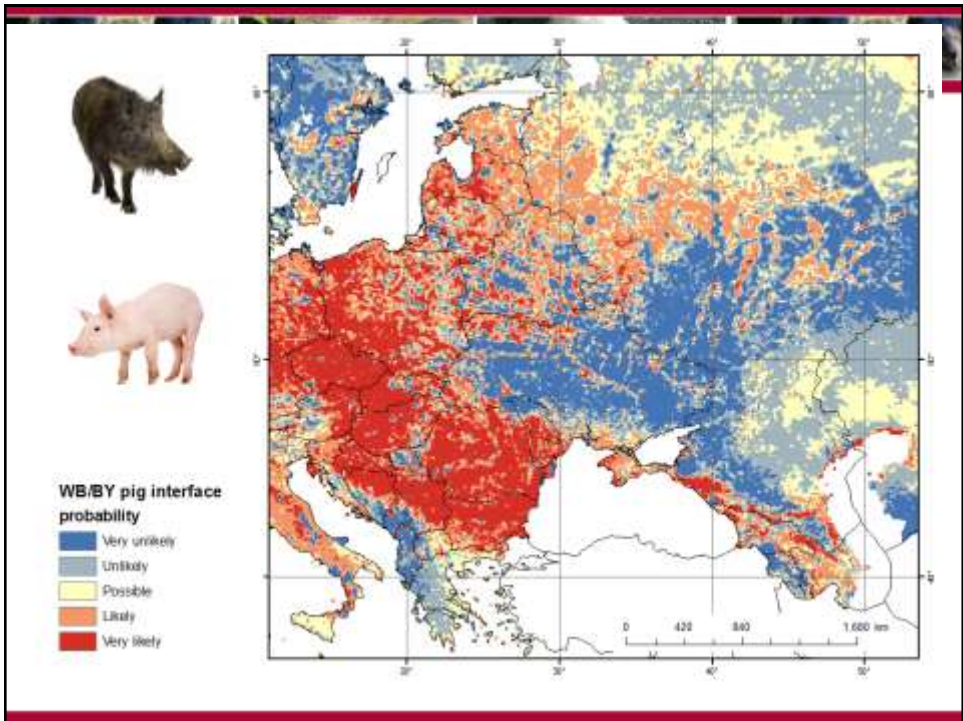
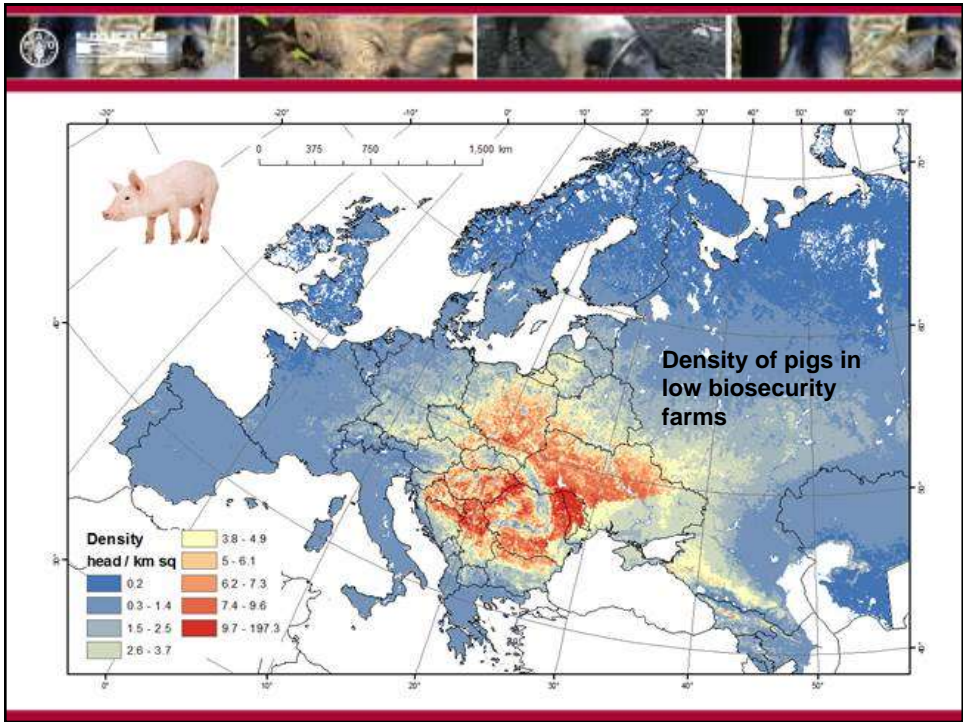
- **WB data:** average density for suitable area by admin unit ➔
 - WB counts/harvest data (n = 504 sub units)
 - Timeframe: 2005-2010
 - IUCN WB range to mask out unsuitable areas
- **Predictors:** Average bioclimatic and environmental variables for suitable habitat by admin unit ➔
 - 18 bioclimatic variables (Worldclim)
 - 3 continuous vegetation cover
 - topography (elevation and slope)

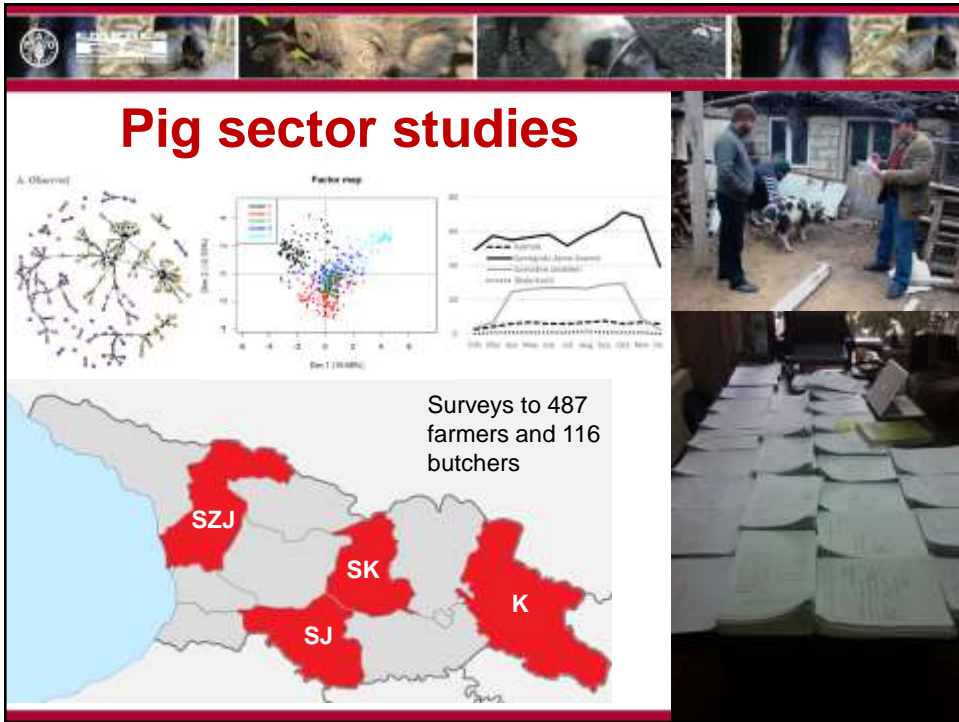




Conclusions

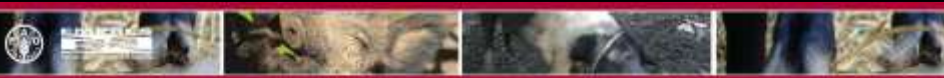
- The wild boar predicted densities were highly accurate both against the original input data as well as the independent data (Melis et al. 2006)
- The map can be a useful tool for decision makers, dealing with WB management, epi, surveillance, prevention and control





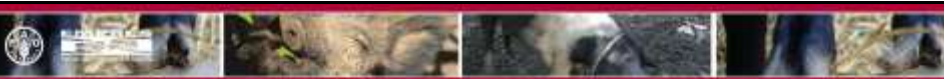
- D Beltrán-Alcrudo, EA Kukielka, N de Groot, K Dietze, M Sokhadze, B Martínez-López. 2018. [Descriptive and multivariate analysis of the pig sector in Georgia and its implications for disease transmission](#). PLoS ONE 13(8): e0202800.
- Kukielka EA, Martínez-López B, Beltrán-Alcrudo D. 2017. [Modeling the live-pig trade network in Georgia: Implications for disease prevention and control](#). PLoS One 12(6): e0178904

- Questionnaires for both farmers and butchers
- Contents: biosecurity, husbandry, market chains, awareness, socioeconomic aspects, wild boar



Main findings

- Major production/husbandry strategies
- Main characteristics:
 - Secondary income
 - High within-country variability and seasonality
 - Not professional
- Main biosecurity gaps at farm level:
 - Scavenging, i.e. Highest scavenging → Highest # of outbreaks
 - Swill feeding
 - Reproductive management
 - No apparent major connection to wild boar
- Key social network knots identified: Live animal markets and middlemen

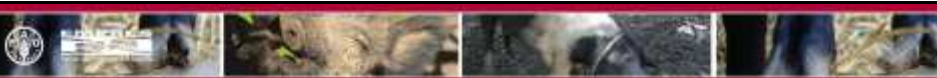


- D Beltran-Alcrudo, JR Falco, E Raizman, K Dietze. 2019. [Transboundary spread of pig diseases: the role of international trade and travel](#). BMC veterinary research 15.1 (2019): 64.

Overview of the different pig disease introduction and exposure pathways, illustrated with abundant examples.

Table 1 Main introduction and exposure pathways for transboundary zoonotic diseases into free areas

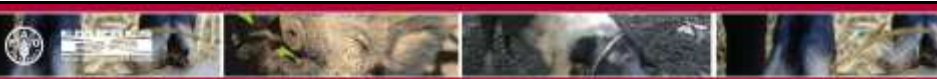
Introduction pathways			Reference		Exposure pathways
			Normal	Unusual	
Air pathway			<p>1977 USA to Spain via Netherlands (García-Ortola et al., 2005; Thomas et al., 1999; Piloni, 2000; 2004; 2005; 2006; 2007; 2008; 2009; 2010; 2011; 2012; 2013; 2014; 2015; 2016; 2017; 2018; 2019; 2020; 2021; 2022; 2023; 2024; 2025; 2026; 2027; 2028; 2029; 2030; 2031; 2032; 2033; 2034; 2035; 2036; 2037; 2038; 2039; 2040; 2041; 2042; 2043; 2044; 2045; 2046; 2047; 2048; 2049; 2050; 2051; 2052; 2053; 2054; 2055; 2056; 2057; 2058; 2059; 2060; 2061; 2062; 2063; 2064; 2065; 2066; 2067; 2068; 2069; 2070; 2071; 2072; 2073; 2074; 2075; 2076; 2077; 2078; 2079; 2080; 2081; 2082; 2083; 2084; 2085; 2086; 2087; 2088; 2089; 2090; 2091; 2092; 2093; 2094; 2095; 2096; 2097; 2098; 2099; 2100; 2101; 2102; 2103; 2104; 2105; 2106; 2107; 2108; 2109; 2110; 2111; 2112; 2113; 2114; 2115; 2116; 2117; 2118; 2119; 2120; 2121; 2122; 2123; 2124; 2125; 2126; 2127; 2128; 2129; 2130; 2131; 2132; 2133; 2134; 2135; 2136; 2137; 2138; 2139; 2140; 2141; 2142; 2143; 2144; 2145; 2146; 2147; 2148; 2149; 2150; 2151; 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IAEA Coordinated Research Project (CRP) for Early and Rapid Diagnosis and Control of ASF



- 2014-2019 (1st Meeting on 7-11 July 2014, Vienna, Austria)
- Participating countries:
 - Burkina Faso, Cameroon, China, Côte d'Ivoire, Germany, Nigeria, Russian Federation, Senegal, Uganda, Zambia
- Topics covered:
 - Serology
 - Molecular diagnostics
 - Epidemiology and sequencing
 - Immunization and Immunology



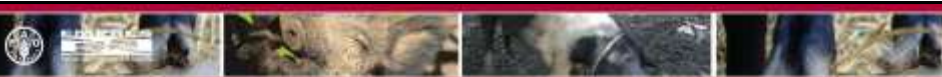
FAO, EU and OIE Reference laboratories/ centres in ASF

- **ARC-OVI** (Agricultural Research Council, Onderstepoort Veterinary Institute), South Africa
 - **FAO** and **OIE**
- **CISA-INIA** (Centro de Investigación en Sanidad Animal - Instituto nacional de investigación y tecnología agraria y alimentaria), Spain
 - **FAO** and **EU**
- **Pirbright Institute**, UK
 - **OIE**
- **UCM** (Universidad Complutense de Madrid), Spain
 - **OIE**
- **IZS, FLI, UAB...**



Emergency Technical cooperation project in the Balkans

- **Target countries:** Albania, Bosnia and Herzegovina, North Macedonia, Montenegro and Serbia
- Plus a parallel project with the same objectives in Kosovo
- **Objective:** Increase prevention and preparedness
- **Timeline:** Nov 2018- Nov 2019 (12 months)



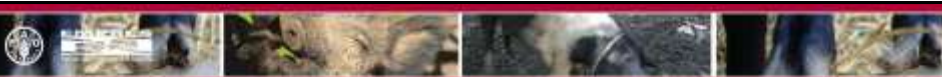
OUTPUT 1: Enhanced legal, regulatory preparedness and coordination for ASF at national level

- 1.1 Strengths and weaknesses of the national veterinary and diagnostic services are assessed
- 1.2 Simulation exercises on ASF to ensure appropriate emergency preparedness are organized



OUTPUT 2: National veterinary service personnel trained in ASF detection, prevention and control

- 2.1 Laboratory training activities are organized
- 2.2 Epidemiology training activities are organized
- 2.2 Train-of-trainer programs for field veterinarians on ASF recognition are organized
- 2.3 Workshops on wild boar management and hunting biosecurity are organized



OUTPUT 3: Strengthened disease intelligence capacities for ASF

- 3.1 Risk on entry, spread and establishment of ASF is assessed
- 3.2 A cost-benefit analysis is performed
- 3.4 Training on effective risk communication



OUTPUT 4: ASF awareness among all stakeholder levels created

- 4.1 National awareness strategy documents targeting the most relevant stakeholders are developed
- 4.2 Awareness and technical materials are developed and adapted to meet different stakeholder needs and also translated to local languages and disseminated
- 4.3 Stakeholder workshops are organized and awareness raising materials are distributed to participants



How about the situation in Asia

African swine fever is already affecting the global food markets. According to FAO's 2019 Food Outlook Biannual Report on Global Food Market, one of the highlights is that "the world meat output is forecast to decline due to a fall in pig meat output, primarily in China..."

Also "soybean output is forecast to come to a halt in 2018/19 – largely due to a decline in China's soymeal uptake".

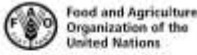
And "Feed use of maize in China has slowed considerably".

However, Challenges for some, opportunities for others?

<http://www.fao.org/3/CA4526EN/CA4526EN.pdf>



Risk Assessment - Threat to China



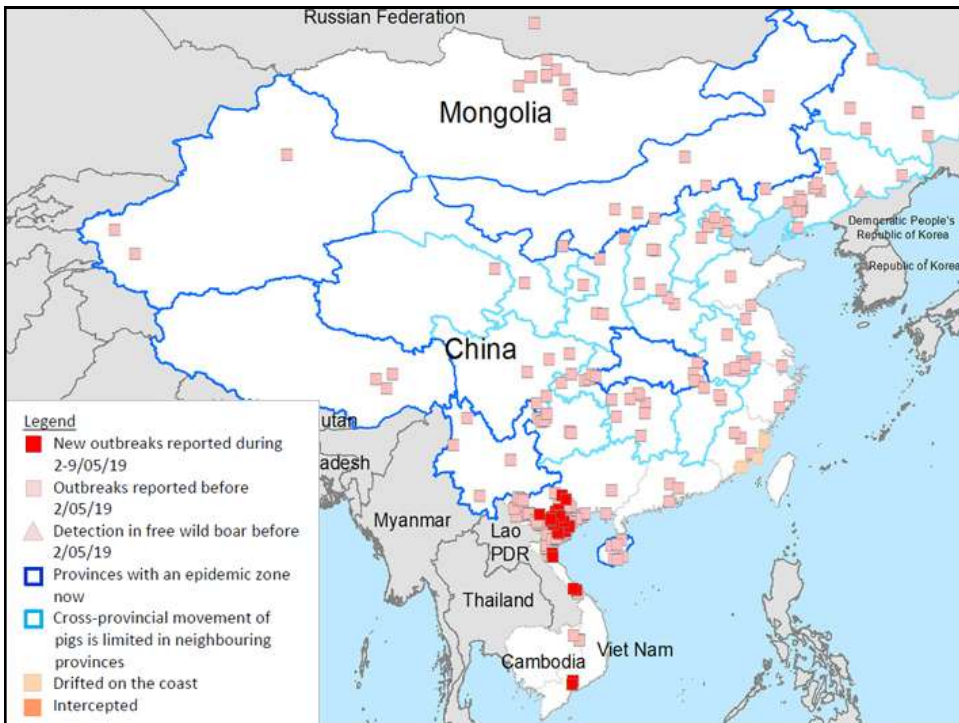
AFRICAN SWINE FEVER THREATENS PEOPLE'S REPUBLIC OF CHINA

A rapid risk assessment of ASF introduction

SUMMARY

- In March 2017, ASF was reported as probable, Russian Federation, thousands of kilometers away from previously reported outbreaks and at approximately 1 000 km from the border with China. Entry of ASF into China would have devastating consequences for animal health, food safety, and food security, and raise the possibility of further spread to Southeast Asia including the Korean Peninsula and Japan.
- The FAO rapid risk assessment framework and methodology were discussed with expert disease experts attending the Second Regional Workshop on Swine Disease Control in Asia (Korea Workshop, 2017).
- The experts participating in this rapid risk assessment, considered transport-associated routes (land) as most relevant pathways of ASF introduction into China, followed by illegal imports of food and by Chinese workers working abroad.
- China's northeastern region (Jilin/Jiangling province) is where ASF is most likely to be introduced, followed by Inner Mongolia.
- Wild boar population density is the most relevant factor to the spread of the disease.
- The most likely regions for ASF spread are the northeast (Jilin/Jiangling), followed by the central eastern zone (Henan, Shaanxi, Anhui, and Hubei) and the southeast (Guangxi). Surveillance for other diseases in this region should be heightened.
- ASF is most likely to persist and become endemic due to the presence of wild boar.

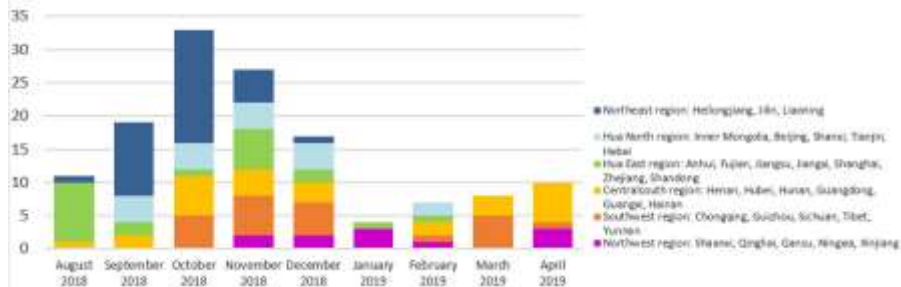
FIGURE 17. Most likely way of ASF introduction





What's FAO doing in Asia

- [ASF situation in Asia update](#) (weekly)



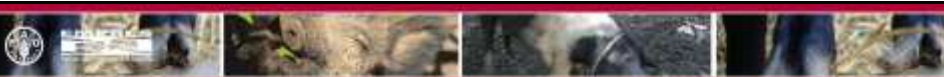
EMC missions

- Viet Nam from 11 to 16 March to assess ASF situation and response strategy.
- Myanmar to assess ASF preparedness, including laboratory capacity (March 2019).
- Mongolia to assess ASF situation (February 2019).
- Democratic People's Republic of Korea to assess ASF preparedness (January 2019) [[reference](#)].



Regional meetings

- Emergency Regional Consultation on African Swine Fever on Risk Reduction and Preparedness -Bangkok, September 2018 [\[reference\]](#)
- Technical Consultation on 'Application of Technology to Strengthen ASF Control through Rapid Detection and Response - Beijing, October 2018 [\[reference\]](#)
- Multilateral Cross-Border Meeting in Greater Mekong Subregion to Strengthen Collaboration of TADs Control - Beijing, November 2018
 - which included "ASF Emergency Preparedness training" for Lao PDR, Myanmar, Viet Nam and China [\[reference\]](#)
- A [Standing Group of Experts on African Swine Fever \(SGE-ASF\) for Asia](#) has been established, similar to the approach taken in Europe. The [1st SGE-ASF for Asia Workshop](#) – Beijing, April 2019
- Beijing International Symposium on ASF was jointly organized by MARA, FAO and OIE on 8-9 April in Beijing [\[reference\]](#)



TCPs

- FAO Technical Cooperation Programme project "African Swine Fever Emergency Preparedness and Response in East and Southeast Asia" (TCP/RAS/3704) started on 23 April 2019.



Thanks for your attention