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Report on African Swine Fever (ASF) in Asia and the Pacific

Executive Summary

The recent epidemic of African swine fever (ASF) has affected 10 out of 42 member countries in the Asia and the Pacific region, seriously affecting their economies and the global pig production and meat supply. ASF kills domestic and wild pigs and there is no effective vaccine. The ASF virus does not infect humans, but the disease affects national food security and national and international trade opportunities. As pig production is an important sector of the economy and pork is a preferred commodity in many parts of East and Southeast Asia, control of the disease is a shared interest and must be considered a shared responsibility. Well-coordinated national, regional and global efforts will be required among governments, national veterinary services and other public institutions, as well as among other stakeholders, including but not limited to the pig production industry, value-chain actors involved in marketing and trade, and regional and international bodies. A multidisciplinary, multisectoral and multilateral collaborative approach, with effective allocation and management of sufficient resources, will be crucial to control and prevent further spread of ASF.

Suggested action by the Regional Conference

Member countries must implement appropriate ASF control strategies in order to reduce the burden of ASF, promote economic prosperity, ensure food security and facilitate safe trade of pig commodities. Regional and national strategies must include the following:

- improved technical capacity and expertise to identify and use relevant scientific knowledge for ASF control planning;
- capacities to manage and inspect animal movement and meat products entering a country or region through trade and with travellers, who may be unknowingly carrying contaminated products;
- systems that stimulate rapid reporting of suspect cases;
- well-prepared field investigation teams;

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- appropriate enforcement of legislation for adequate biosecurity in pig production sectors and pig movement control;
- proper outbreak containment, including humane culling of infected pigs and disposal of carcasses and their contaminated products;
- cleaning and disinfection of affected farms and contaminated objects;
- improved collaboration among multiple sectors; and
- awareness-raising programmes for all relevant stakeholders.

As countries face different challenges and limitations, it will be necessary to develop a deep understanding of diverse production systems and market chains, the role of wildlife and vectors, and economic considerations such as the cost of the disease and benefits of access to national and international markets.

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Introduction

1. African swine fever (ASF) is a contagious viral disease that kills domestic and wild pigs of all ages. In domestic pigs, ASF is transmitted mainly through direct contact from an infected pig to a susceptible one, or from the ingestion of pork or other contaminated products containing the virus including swill, waste, carcasses, etc. Further transmission pathways are indirect contact through fomites such as farm or veterinary equipment, pig transporting vehicles, tools, shoes and other contaminated objects. In areas where competent vectors belonging to the soft tick *Ornithodoros genus* exist, transmission can influence virus persistence in the environment (such is the case in many parts of Africa). ASF does not infect humans or other livestock species.
2. Considering the absence of an effective vaccine or treatment, the best strategy against ASF for countries and zones that are still free of the disease is to prevent the entry of the virus through improved border control, proper awareness-raising and improved biosecurity. ASF outbreaks have been controlled in some countries by culling and disposing of infected and exposed pigs; banning or restricting the movement of live pigs and their products; and cleaning and disinfecting infected farms, equipment and vehicles moving in and out of affected areas.
3. ASF was reported for the first time in Asia on 3 August 2018 in the People's Republic of China. The situation evolved rapidly as ASF continued to spread within East and Southeast Asia, notably Cambodia, Democratic People's Republic of Korea, the Republic of Korea, the Lao People's Democratic Republic, Mongolia, Myanmar, the Philippines, Timor-Leste and Viet Nam (at the time of going to print).
4. For the latest information on current outbreaks and FAO actions, see the weekly ASF situation update of FAO: http://www.fao.org/ag/againfo/programmes/en/empres/ASF/situation_update.html

Pig production and market chains in Asia

5. In most countries in Asia, different pig production systems coexist, from the simplest one with minimal investment to large-scale, market-oriented enterprises. Pig production systems can be grouped into three main categories, based on the size of herds, production goals and husbandry management:¹
 - a. Subsistence farming scavenging pigs: This is the most basic traditional system of keeping pigs and the most common in urban and rural areas in developing countries. Most scavenging pigs are owned by subsistence farmers, mainly for their own consumption. Marketing is usually ad hoc, and the animals may be sold for emergency cash needs, such as to buy seeds or fertilizer, to pay school fees, to compensate for a lost harvest or at times of illness or family festivity. Little, if any, investment is made by the owners to protect against health threats.
 - b. Small-scale confined pig production: In this category, there is little investment in biosecurity practices or hygiene. Animals are often confined in shelters, which range from simple pens made from local materials to more stable housing structures. Smallholders raise pigs for both subsistence and commercial reasons and employ low-cost feeding using waste from household kitchens, restaurants or waste dumps. Pork is supplied to local and more distant urban markets through a complex transport and marketing system.

¹ Food and Agriculture Organization of the United Nations/World Organisation for Animal Health/World Bank. Good practices for biosecurity in the pig sector – issues and options in developing and transition countries. *In*: FAO Animal Production and Health Paper. Vol. 169. Rome: FAO; 2010.

- c. Large-scale confined pig production: This category includes confined pigs in commercial production systems which vary considerably in size and management and which aim to reduce the cost of production per pig. These farms can be owned by families or corporations or may be affiliated with other companies. One of the good management practices used in this type of production system is the “all-in–all-out” production system in which animals are kept in groups according to age and weight and are not mixed together during their stay on the farm. When a group moves forward, the facility is completely emptied. This system reduces disease transmission, improves sanitation, allows better environmental control and improves pig performance and record-keeping. Usually, other components of a biosecurity plan are also implemented.

6. Most pig producers in Asia are engaged in either subsistence farming or small-scale confined pig production. In many countries, most pig meat still originates from these production systems which depend on agro-industrial by-products and waste from household kitchens or restaurants for feed and are characterized by very poor hygiene and biosecurity practices. This creates the concern that the current husbandry practices in East and Southeast Asian countries fail to provide the required biosecurity standards to contain ASF. The pig/pork value chains in most affected countries are dominated by direct transactions between producers and pig traders. These traders resell live pigs to others who mostly supply butchers, pork processors, markets and cooked pork sellers in restaurants and streets. This leads to piglets, finished pigs, culled sows and breeders being transported between farms, facilitating the spread of virus through infected pigs or contaminated vehicles and equipment. There has been active exchange of live pigs and all sorts of pork products within the region, including sausages, cured meats and other processed pig meat products which may contain the ASF virus which can enter the pig life cycle through swill feeding. These subsistence pig production systems and market chains enable ASF to spread far and fast and also lead to the possibility that the disease could resurface in the region for years after the initial outbreaks.

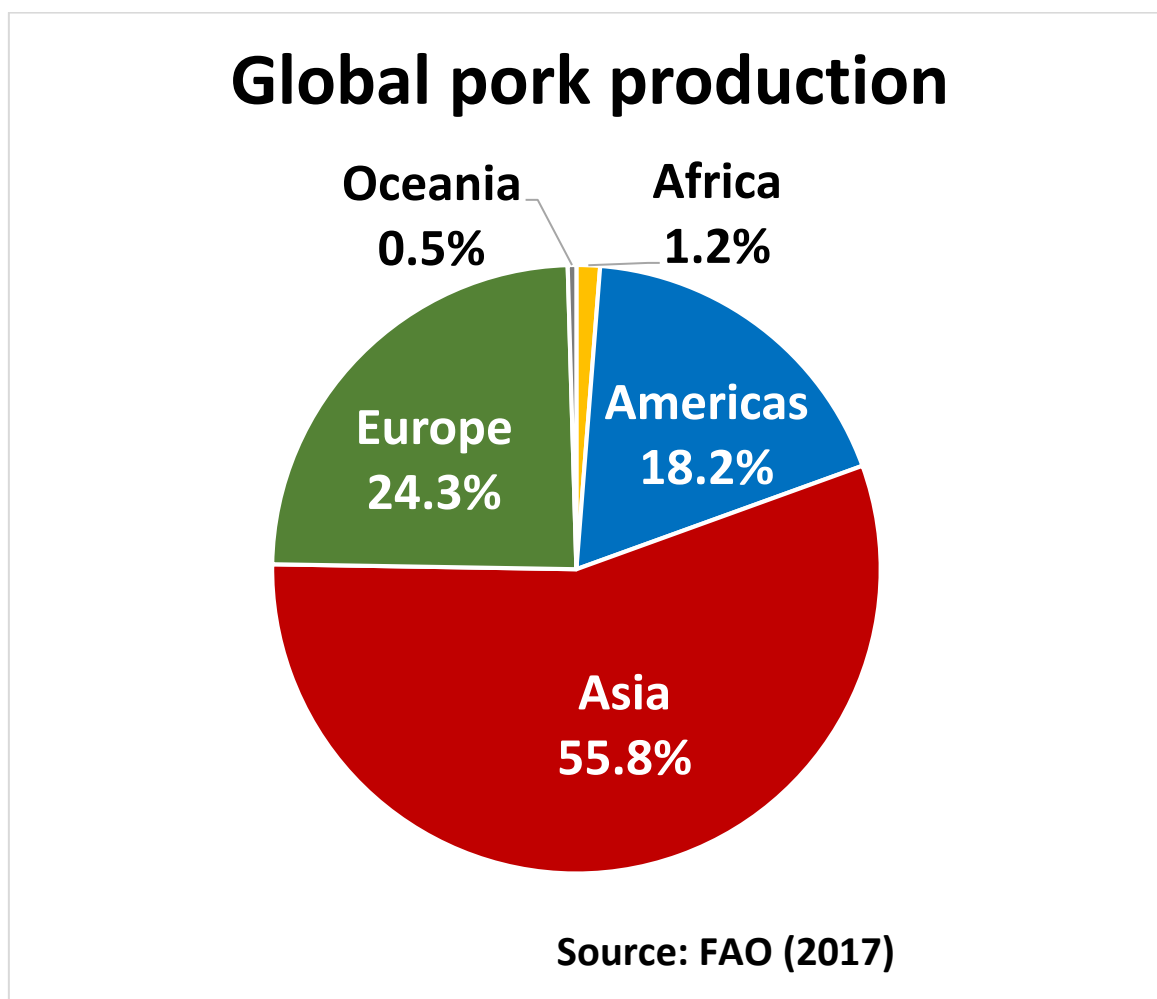
Impact on conservation and biodiversity

7. ASF could also affect the populations of endangered *Asiatic Suidae*, especially if the virus parallels the epidemiological patterns observed in wild pigs. Though not likely, there is the risk that some wild pig species (e.g. genus *Babirussa* and *Sus*) will behave similarly to the African warthog and hence become a persistent reservoir for the ASF virus.

Socio-economic impacts of ASF

8. Pigs have become an important source of quality, inexpensive animal protein because of their fast growth, efficient feed conversion, quick turnover and high fertility. Pork is the most consumed meat from terrestrial animals, accounting for over 37 percent of global meat intake, followed closely by chicken (35.2 percent) and beef (21.6 percent). Asia is considered the major source of pork production; China accounts for about 50 percent of the global pig meat supply, while Viet Nam ranks as the fifth largest producer (Figure 1).

Figure 1: Global pork production



9. In many member countries, pork is a key part of the population's diet and culture, and therefore maintaining a supply of affordable pork is of paramount importance for food security. In many low- and medium-income countries, pigs are often an additional source of household income which contributes to rural development. As pork is the preferred meat in parts of East and Southeast Asia, demand does not always respond directly to changes in prices which may rise as a result. Nevertheless, as pork prices increase, some consumers may substitute other animal protein sources for pork. As poultry is the closest pork substitute, poultry prices may also increase, depending on the extent of substitution.

10. Prolonged ASF outbreaks that negatively affect pig production are creating a dynamic and uncertain situation in global markets and global pig value chains. Lower pig inventories resulting from pig deaths would lead to lower demand for key commodities such as veterinary pharmaceuticals, feed grains and milk powders largely used for animal feed. The loss of standing swine numbers in the region will also affect other parts of the agriculture and trade web, including transportation of live pigs and chilling systems used to preserve pork products.

11. ASF has affected all production systems in Asia. In the large-scale commercial pig sector, economic losses result from the direct impacts of the disease, market disruptions and unintended repercussions of control measures such as movement restrictions. In addition, households involved in scavenging and small-scale pig production face drastic challenges to maintain their livelihoods, food availability and nutrition, and they can face debt traps and chronic poverty. These impacts can be

amplified by some control measures, such as mass culling without appropriate compensation, which is the main measure to prevent further spread of the disease in the absence of a vaccine.

12. With the progression of ASF in the region, more smallholders may leave swine production owing to the high risk of ASF outbreaks or the high costs of instituting biosecurity; this may lead to a consolidation and concentration of swine production by large-scale operators. As a consequence, the social and economic impact of ASF may return more people in rural areas to poverty. This will affect the progress of the FAO Zero Hunger 2030 Agenda, as well as national strategies to eliminate extreme poverty.

Difficulties and challenges

National veterinary services and emergency preparedness

13. National veterinary services play a vital role in ASF preparedness, prevention, detection and response. Strengthening capacities of veterinary services to ensure adequate emergency preparedness and early detection of ASF can enable rapid response in laboratory confirmation, definition of infected and high-risk areas and effective outbreak containment (e.g. culling, proper disposal of carcasses, cleaning and disinfection of contaminated premises, and movement restriction). The national veterinary service must be considered a strong partner of the private sector and allied industries, and the private sector must contribute to creating an enabling environment to successfully eliminate or mitigate the damage of an ASF threat.

14. Rapid assessments were conducted on the preparedness status of participating countries by missions of FAO's Emergency Management Centre for Animal Health (EMC-AH) during the Regional Emergency Consultation on ASF Emergency Preparedness organized in September 2018.² Eight out of eleven countries in the region were not considered prepared for ASF. Identified gaps included: limited information on pig value chain and ASF risk pathways; no clear incident command system during outbreak containment; limited funding resources; and lack of a contingency plan, legal framework, compensation policy, risk communication and advocacy strategy, stockpiles of field and laboratory supplies for emergency response, and standard operating procedures for outbreak containment.

One Health approach and multisectoral coordination

15. One Health and multidisciplinary approaches must be used as the epidemiology of the ASF virus is strongly influenced by human behaviour and involves the interface among livestock, wildlife and the environment. ASF is a transboundary animal disease with high impact on the pig sector which could lead to potential adverse effects on food security. However, as evidenced from initial press releases in Asia in 2018, it must be emphasized that ASF does not infect humans in order to stop rumours at inception of an outbreak.

16. Tackling ASF cannot be just a concern of veterinary authorities. There are serious challenges in logistics and environmental and animal welfare concerns in a severe ASF outbreak. Incorrect carcass disposal, for instance, could contaminate the ground water. The decision to cull large numbers of likely exposed but yet healthy pigs, especially in developing countries, may also be politically challenging.

17. Asia's experience with avian influenza and control of other transboundary animal diseases shows that effective actions and approaches need to be multisectoral. Animal disease management is not solely a government or technical agency's responsibility. ASF prevention and control is everyone's responsibility. Also, disease reporting is the responsibility of not only farmers and the private sector, but also governments, especially in sharing disease information across borders and communicating risks to the private sector and general public.

² Meeting report of the Emergency Consultation on ASF Emergency Preparedness organized in September 2018, FAORAP

Shared responsibilities at country and local levels

18. The ASF virus is highly resistant in the environment and can remain contagious for many months in uncooked, cured or frozen meat products. There is high risk of re-emergence and progressive spread of the disease and eventually endemic persistence as soon as countries stop control efforts. Stakeholders at national and local levels share responsibility to achieve sustainable disease control by implementing risk-based measures under the overall management and quality assurance provided by a national veterinary authority. Unfortunately, many countries do not fulfil these criteria, and at the local level, livelihoods are affected and producers may not receive adequate institutional support or feasible options to protect their assets.

A dynamic ASF situation

19. The situation in most affected countries remains highly dynamic. National policies implemented to control ASF have been shown to be not always effective, partially because they are not evidence-based about the disease ecology and partly because of a lack of technical or financial capacities. As the disease continues to expand into new territories, preparedness and control activities need to be constantly adjusted to adapt to situations observed in the field that may be contrary to what was expected based on international standards or experiences from other parts of the world. National veterinary services face challenges in these complex situations, and so regional and international support will be needed to fill capacity gaps required for ASF control and to facilitate dialogue among key stakeholders.

20. Quality veterinary services provide confidence to private-sector investment, which results in an improved national economy and livelihoods. Engaging public and private funding partners through effective advocacy and by demonstrating the value of ASF control will encourage sustainable investment and create an enabling policy context for ASF control.

FAO actions to address the gaps

21. In an effort to address the identified gaps in ASF prevention and control, FAO is mobilizing resources to support member countries to strengthen their emergency preparedness and response capacities. So far, some financial resources from China, the Republic of Korea, the United States of America and FAO have been made available to support the countries in the region, but longer-term commitment is required. The Veterinary Services of the FAO member countries affected by ASF need national support to meet the expectations of their citizens.

ASF control efforts under the Global Framework for the Progressive Control of Transboundary Animal Diseases (GF-TADs)

22. In 2004, the World Organisation for Animal Health (OIE) and FAO jointly launched the Global Framework for the Progressive Control of Transboundary Animal Diseases (GF-TADs)³ to prevent, detect and control transboundary animal diseases and, in particular, to address their regional dimensions. The initiative combines the strengths of both international organizations to achieve common objectives and serves as a facilitating mechanism to empower regional alliances in the fight against transboundary animal diseases based on regional priorities.

23. Under the umbrella of the GF-TADs in Asia, the Standing Group of Experts on ASF (SGE-ASF) for Asia was launched in April 2019 to build closer cooperation among countries to address ASF in a more collaborative and harmonized manner across Asia. The SGE-ASF promotes regular exchange of information and best practices among policy-makers, risk managers and international and national experts in order to coordinate disease control policies and build science-based national control strategies. The SGE-ASF is considered a unique opportunity to engage affected countries in a fruitful regional dialogue and increase transparency and trust. So far, there have been two SGE-ASF meetings to discuss recommended actions for early detection, surveillance, biosecurity and border control.

³ <http://www.gf-tads.org/>

24. A regional strategy for control of priority pig diseases, including ASF, in Southeast Asia is being developed by the Association of Southeast Asian Nations (ASEAN) Working Group on Livestock with support from OIE and FAO. The strategy follows three principles:

- a. Strengthening capacities required for preparedness, prevention, detection and response.
- b. Advocacy and awareness-raising among the key stakeholders for better practices and cooperation in disease control.
- c. Multidisciplinary, multisectoral and multilateral collaboration, cooperation and coordination to promote specific disease control as well as overall pig herd health management at the country and transboundary levels.

25. As ASF is not limited to Asia and has implications at the global level, it is crucial to harmonize all regional strategic initiatives towards a global strategy for ASF control; this is now being developed by FAO under the GF-TADs umbrella. The global strategy will use a science-based approach considering, for example, ASF epidemiology, pig production practices, socio-economic and environmental aspects of each region or subregion, the capacities of governments and public and private sectors, and recent lessons learned in controlling ASF.

Conclusion

26. As ASF has potential global socio-economic impact, controlling the disease is a shared interest and must be considered a shared responsibility. Political commitment and support is crucial to ensure the whole-society-approach with sufficient resources for all concerned sectors. Veterinary services, which include public and private sectors in both affected and unaffected countries, have the mandate to safeguard animal health and welfare and should lead the implementation of effective coordinated countermeasures to minimize the global impact of the disease. In the medium to longer term, good animal husbandry practices have to be promoted for safer production of livestock along the market chains, and pig producers must be responsible for ensuring their compliance. This will not only reduce the burden of ASF, but will also contribute to alleviating poverty by improving the livelihoods of pig producers in low- and middle-income countries, protecting ASF-free countries, and ensuring safe international trade of pigs and their products. Achieving such efforts would contribute to the Sustainable Development Goals (SDGs), in particular SDG 1 (no poverty), SDG 2 (zero hunger) and SDG 17 (partnerships).⁴

⁴ <https://sustainabledevelopment.un.org/>