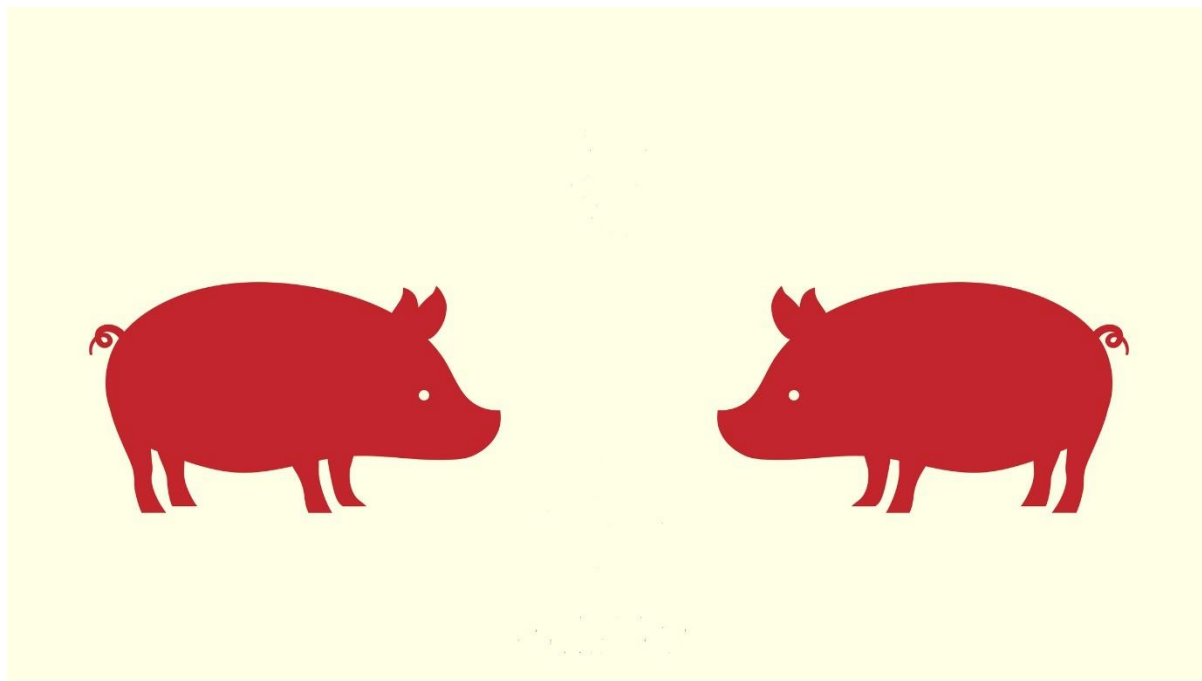


China and Vietnam's questionable strategy to control Asia's pig pandemic



This is an update to previous reports we've written on ASF. Please find those [here](#), [here](#) and [here](#).

In June of last year, a pioneer African swine fever (ASF) vaccine called NAVET-ASFVAC was commercially released in Vietnam, bringing immediate hope to the country's distressed pig farmers, who were enduring the economic devastation from the culling of 20% of the national pig stock.¹

With Vietnam being the second largest pork producer in Asia, its minister of agriculture Phùng Đức Tiến, understandably boasted to the media that the vaccine was the result of rigorous scientific research funded by the government with support from the US. "The production and quality of the vaccine are ensured to fully meet regulations and requirements", he said.²

Yet, in the months that followed, state veterinarians rushed to the central province of Phu Yen, responding to reports of farmers that their pigs were dying after being given the new

¹ Pigworld, "Vietnam suspends ASF vaccine after pig deaths", 26 Aug 2022: <https://www.pig-world.co.uk/news/vietnam-suspends-asf-vaccine-after-pig-deaths.html>

² Vietnamnet, "Pig deaths after vaccination not because of vaccine quality: agriculture official", 7 Sep 2022: <https://vietnamnet.vn/en/pig-deaths-after-vaccination-not-because-of-vaccine-quality-2057537.html>

vaccine. Optimism came crashing down. The increased mortality following vaccination was confirmed. A few hundred pig deaths later, the government decided to suspend the vaccine.

Regarded as the most severe livestock disease outbreak in recent history, as of July 2022, ASF has been reported in 74 countries around the world.³ In Asia, prior to August 2018, there were no reports of ASF. The outbreak of this disease has now expanded to 16 Asian countries despite the culling of millions of pigs by national authorities.⁴

China's ASF policy led to pig farm concentration

The outbreak of ASF in Asia can be traced back to August 2018 when China reported its first case. To contain the spread of the disease, China issued guidelines on ASF prevention and control, declaring that it would “promote large-scale pig farming and reduce the number of small pig farms as ways to prevent and control ASF outbreaks”.⁵ The government then put out a statement emphasising that it would provide production subsidies to large-scale pig farms in areas heavily affected by the disease.

As promised, a long list of subsidies and loans to restore pork supplies have been given exclusively to scaled-up farms. Under the constant threat of ASF, the government launched a certification system based on “ASF-free zones” to keep trade channels open for corporate pig farms.

Evidence gathered over the last four years, however, shows that the construction of bigger and more centralised pig farms has not stopped the virus. On the contrary, this approach might be facilitating the spread of ASF and seriously hurting rural livelihoods in China.

Statistics show that China had 21 million pig farms in 2020, a massive decline from the 105 million pig farms that existed in the country two decades ago.⁶ The decline was kicked-off by environmental measures that eliminated millions of small pig farms that were unable to comply. Now, as a result of government ASF policies, the pig industry has become further centralised and industrialised.

Pig farmers can apply for compliance with a set of biosecurity standards issued by the Ministry of Agriculture and Rural Affairs. Due to high-evaluation criteria, however, the selected farms only belong to big companies.⁷ This mechanism is even used as an institutional tool to crack down on small pig farmers. Since its release in February 2021, 166 ASF-free zone labels have been granted to big corporations.⁸

³ OIE updates on recent ASF dynamics; global situation: <https://www.woah.org/en/disease/african-swine-fever/#ui-id-2>

⁴ FAO, “African swine fever (ASF) situation update in Asia & Pacific”, 24 Nov 2022: <https://www.fao.org/animal-health/situation-updates/asf-in-asia-pacific/en>

⁵ Reuters, “China's cabinet issues guidelines on African swine fever control”, 3 July 2019: <https://www.reuters.com/article/china-swinefever-policy/chinas-cabinet-issues-guidelines-on-african-swine-fever-control-idUSB9N23L01B>

⁶ Official data source from China livestock industry yearbooks

⁷ Efeedlink, “China's strategy for controlling ASF”, 20 Dec 2022: <https://www.efeedlink.com/contents/12-20-2022/7d5a6bd2-7b46-4fed-a339-79880e78adf0-a001.html>

⁸ As of November 2022

The set-up of ASF-free zones has become part of the government's political performance incentive programme, a way for local governments to boast fulfilment of their duties and service.⁹ Under this scheme, provincial and other local level officials are encouraged to offer a series of advantages to corporate farms that pass the ASF-free zone test, such as subsidised financing, favourable land leases and discounts on virus surveillance fees. Corporations with ASF-free zone certification can also bypass the heavy restrictions on the movement of pigs across domestic and foreign zones.

One such company benefiting from ASF policies is Muyuan Food, one of China's mega pig producers. Muyuan Food's profits grew by 1,413% in the first nine months of 2020 to USD 3.21 billion.¹⁰ These profits boosted the company's capacity to expand its pig farms and further its biosecurity measures and level of automation. Muyuan's business expansion relies heavily on digitalisation, AI systems and farm infrastructures. These have won the company a high level of recognition from the Chinese government which granted it 23 ASF-free zones in 2022 -over 45% of all the new ASF-free zones given.¹¹

Elsewhere in east Asia: In January of last year, Thai officials confirmed a case of ASF in the pig farm province of Nakhon Pathom. Since then, ASF has been regularly found among pig farms in 18 provinces,¹² and the number of small pig farmers has drastically dropped by 43.35%.¹³ While in Nepal, in just 8 months of outbreak – from March to November 2022-over 15,000 domestic pigs died from ASF.¹⁴

Corporate pig farms in China operate under two key business models: the capital-intensive integrated model like Muyuan Food and the corporate-farmer contract model. The pandemic has created even more favourable conditions for the capital-intensive integrated model.

When Chinese authorities came up with measures to halt the spread of ASF, they ignored the fact that nearly all of the major outbreaks had started in big industrial farms, despite their modern installations supposedly having the best levels of disease prevention. One of these farms, located in the north-east province of Heilongjiang, owned 73,000 pigs and is jointly owned by the Heilongjiang Asia-Europe Animal Husbandry Company and the Danish investment fund IFU¹⁵.

⁹ CRNEW.net, 12 Dec 2022: http://journal.cnews.net/nmwz/2021n/2021nd10g/cxjc/936543_20211014093011.html

¹⁰ Reuters, "Flush with cash, Chinese hog producer builds world's largest pig farm", 7 Dec 2020: <https://www.reuters.com/article/us-china-swinefever-muyuanfoods-change-s-idUSKBN28H0MU>

¹¹ The Official communication from the Ministry of Agriculture & Rural Affairs, dated 29 Sep 2022: http://www.moa.gov.cn/govpublic/xmsvj/202209/t20220930_6412416.htm

¹² Post Today, "The Department of Livestock Development reveals that ASF has spread in 18 provinces in swine.", 28 Jan 2022: <https://www.posttoday.com/social/general/674266>

¹³ FFTC-AP, "Thai swine industry during African swine fever outbreak in Asia", 29 Mar 2022: <https://ap.fttc.org.tw/article/3011>

¹⁴ The Kathmandu Post, "Over 15,000 pigs died in African swine fever outbreak in Nepal since March, 5 Dec 2022: <https://tkpo.st/3E6Vuul>" <https://kathmandupost.com/national/2022/10/03/over-15-000-pigs-died-in-african-swine-fever-outbreak-in-nepal-since-march>

¹⁵ National Hog Farmer, "African swine fever hits largest farm yet in China", 3 Jan 2019: <https://www.nationalhogfarmer.com/livestock/african-swine-fever-hits-largest-farm-yet-china>

Ironically, as a response to the continued spread of ASF, factory pig farming in China is “upgrading”. In August 2022, a new 26-storey pig farm entered production. The giant operation is located in Ezhou, a city in central China’s Hubei province, with a capacity to slaughter 1.2 million pigs annually.¹⁶ The company behind it, Hubei Zhongxin Kaiwei Modern Farming, started as a cement investment group, but switched to pig farming when the construction sector contracted due to Covid. A total of 4bn yuan (USD580 million) has been invested into the mega farm. In addition to this, from January to March 2022, Zhongxin Kaiwei submitted 10 patent applications relating to livestock wastewater treatment, feed transportation, and ventilation technology systems.¹⁷

According to the Big Herdsman Co., a Tsingdao-based livestock facilities construction contractor, the number of multi-storey pig farms has increased at an annual rate of 30% since 2020.¹⁸ The company itself has participated in over 200 multi-storey sow building projects since 2019. This boom is said to be the result of the recent policies on ASF and a 2019 agriculture land use management policy that officially authorised livestock production in multi-storey buildings.¹⁹

A Vietnam-US collaboration rush to commercialise the ASF vaccine

Given that ASF has a lethal rate close to 100%, finding a vaccine seemed like an obvious key strategy to control the outbreak. In June 2022, Vietnam -which had culled more than 6 million pigs and had over USD1.29 billion in losses due to the swine virus- launched the world’s first ASF vaccine. In development since November 2019, the vaccine, known as NAVET-ASFVAC, is being handled by the Vietnamese Navetco Company, owned by the Vietnam agriculture ministry, in partnership with the United States Agricultural Research Service (ARS). Its safety and efficacy were confirmed by the ARS under the U.S. Department of Agriculture.

However, only three months after its launch the vaccine was withdrawn. Seven hundred and fifty pigs were found dead on several farms in the central province of Phu Yen after having been injected with the vaccine.²⁰ Although the ARS spokesperson argued that the pig deaths were caused by vaccination processes that did not comply with the ministry guidelines, the vaccine trial was suspended.²¹ However, a total of 23,344 vaccines were already distributed from July to Aug 2022.²² Some vaccines are suspected of having been sold illegally to China.

¹⁶ Guardian, “China’s 26-storey pig skyscraper ready to slaughter 1 million pigs a year”, 25 Nov 2022:

<https://www.theguardian.com/environment/2022/nov/25/chinas-26-storey-pig-skyscraper-ready-to-produce-1-million-pigs-a-year>

¹⁷ Jiemian News, “实探 26 层国内最高养猪大楼：一家水泥公司能不能把猪养好？”, 7 Nov 2022:

<https://www.jiemian.com/article/8327167.html>

¹⁸ Guo Tie, Beijing News, 3 Aug 2022: http://food.china.com.cn/2022-08/03/content_78354651.htm

¹⁹ Ministry of Natural Resources, China, 20 Dec 2020: http://www.gov.cn/xinwen/2019-12/20/content_5462616.htm

²⁰ Reuters, “Vietnam suspends African swine fever vaccine after pig deaths”, 24 Aug 2022: <https://www.reuters.com/world/asia-pacific/vietnam-suspends-african-swine-fever-vaccine-after-pig-deaths-2022-08-24/>

²¹ Feed Strategy, “Pigs died after improper administration of ASF vaccine”, 27 Sep 2022: <https://www.feedstrategy.com/african-swine-fever/pigs-died-after-improper-administration-of-asf-vaccine/>

²² Vietnam Net Global, “Pig deaths after vaccination not because of vaccine quality: agriculture official”, 7 Sep 2022: <https://vietnamnet.vn/en/pig-deaths-after-vaccination-not-because-of-vaccine-quality-2057537.html>

This was a major setback for Vietnam, which wants to leverage its position on the world's map of vaccines. The government is keen to export ASF vaccines to other Asian countries such as the Philippines and China, where hog production and consumption rank among the highest in the world. "Many Chinese companies are interested in landing vaccine orders", said Tiến, the Deputy Minister of Agriculture and Rural Development.

No Silver bullet: Vaccine commercialisation can also impose huge biosecurity, ethical and economic consequences. "Vaccines can help, but are not the silver bullet," says Ron Fouchier, a virologist at Erasmus University Medical Centre. The approach may still require some culling, he says, because viruses will continue to evolve and may occasionally escape vaccines. José Manuel Sánchez-Vizcaíno, a professor of animal health at Complutense University in Madrid, said that the failure of the ASF vaccine in Vietnam sent researchers a sharp reminder of the potency of the ASF virus, which is more resilient, more complex and less understood than the coronavirus causing Covid.²³

Apart from Navetco, at least two other companies in Vietnam are rushing to spearhead the export of ASF vaccines. Agricultural firm Dabaco Group JSC and livestock vaccine producer AVAC Vietnam Co., both started their vaccine test and evaluation in March 2022. Once they get through the legal steps of registration, the vaccines could be licensed in Vietnam soon this year.²⁴

In December 2022, AVAC Vietnam signed a partnership agreement with the Filipino company KPP Powers Commodities on ASF vaccine distribution. Under the agreement, KPP Powers is assigned as the exclusive distributor of AVAC's ASF Live Vaccine in the Philippines, which is the only product of its kind, with government authorisation for export and a duly approved certificate of product registration from Vietnam.²⁵

The widespread use of these products seems far more complicated, though. Even if one ASF vaccine candidate is proven to be effective, there would still be a long way to go before applying it widely in affected countries. One major barrier is that countries like Vietnam are highly interested in expanding pork exports. They will not want to jeopardise their ability to export pork given the difficulty differentiating vaccinated versus infected pigs.²⁶

Vietnam's dual sweeteners to big companies: vaccination and compartmentalisation

In order to unlock pork export opportunities, Vietnam's Ministry of Agriculture signed a memorandum of understanding (MoU) with the International Finance Corporation (IFC) in

²³ The Guardian, "Scientists rush to create vaccine for world's biggest animal disease outbreak", 20 Oct 2022: https://www.theguardian.com/environment/2022/oct/20/scientists-rush-to-create-vaccine-for-worlds-biggest-animal-disease-outbreak?CMP=share_btn_wa

²⁴ VCCI, "New ASF vaccine nears export status", 16 Jun 2022: <https://en.vcci.com.vn/new-asf-vaccine-nears-export-status>

²⁵ Manila Standard, "ASF vaccine seen to end PH livestock industry crisis", 2 Dec 2022: <https://manilastandard.net/business/314283986/asf-vaccine-seen-to-end-ph-livestock-industry-crisis.html>

²⁶ : National Hog Farmer, "ASF vaccination in Vietnam: What it means for the U.S. pork industry", 27 Sep 2022: <https://www.nationalhogfarmer.com/animal-health/asf-vaccination-vietnam-what-it-means-us-pork-industry>

December 2021. The IFC, the private sector branch of the World Bank, was offering technical support for the control of ASF in Asia under its Advisory Project.

The MoU asks Vietnam to carry out a compartmentalisation programme to support market access for its live pigs and pork exports. The programme instructs private sector firms to implement a standardised approach to biosecurity risk management. Similar to the ASF-free zone policy in China, compartmentalisation will only benefit industrial pig corporations by increasing privileged trade channels for their pork exports.

In Vietnam, three companies are to participate in this first prototype. De Heus, Hoa Phat and Masan Meatlife will put forth the development and operationalisation of best practice production and processing standards based on the international standards of the World Organisation of Animal Health. The corporations will then claim compliance and benefit from bio-secured supply chains for the export of live pigs or pork.

New research proves real-life scenario of feed transmission : Besides research on swine transportation, several recent studies examined ASF transmission through commercial feed. Pipestone Applied Research (PAR) in August 2022 concluded a real-life scenario where a virus was introduced to a pig herd via feed ingredients imported from a country known to have the virus. The study establishes a clear link between the entry of the ASF virus to a non-contaminated national swine herd through the prior importation of feed ingredients from an ASF infected country.²⁷

There is growing evidence that contaminated feed ingredients represent a high risk of transmission of the ASF virus at domestic and global levels, yet relevant intergovernmental and governmental agencies, including FAO and WOA, continue to focus on stopping farmers from using food waste as feed and on promoting the use of commercial feeds to reduce the risks of ASF.

China - a global supplier of several key ingredients routinely used in industrial animal feeds - once banned the use of blood plasma in feed because it found out that this was a major transmission risk. However, slaughterhouses needed a market for their blood and lobbied the government, leading the Chinese government to weaken the ban and allow for the sale of feed containing plasmas on the condition of a negative ASF test.²⁸

²⁷ Dee, S., Havas, K., & Spronk, G. (2022). Detection of Senecavirus A in pigs from a historically negative national swine herd and associated with feed imports from endemically infected countries. *Transboundary and Emerging Diseases*, 00, 1– 3. <https://doi.org/10.1111/tbed.14684>

²⁸ A.A. Shevchenko et al. "The spread of African swine fever in the Krasnodar Territory," *Kuban Vet*, 2012: http://www.kubanvet.ru/journal_n5_20121.html?template=print; Betsy Freese, "Why you can't believe what China says about African swine fever," *Successful Farming*, 13 March 2019: <https://www.agriculture.com/news/livestock/china-says-african-swine-fever-is-under-control-but-nobody-believes-it>

The answer lies in supporting small scale farming, not in the pig industry

The centralisation of the pig farming sector in China is not slowing down and other large pork producing countries in Asia are following suit, such as Thailand and Vietnam. This proliferation of intensive pig farms is already generating an array of harmful effects on rural communities in Asia. In Dong Nai province, southern Vietnam, the local community is suffering from the pollution of industrial pig farms' open-air sewage pits present in their village. Some farmers have even had to give up raising silkworms because of fodder crop failure due to the intensive chemicals coming from the pig farms.²⁹

An expansion of massive, industrial, high tech pig farms will only further decimate small pig farmers in a region that has a long history of decentralised smallholder producers - all the while ignoring the proven link between this model and ASF outbreaks.³⁰ If international and national authorities do not quickly steer away from this direction, they will exacerbate the risks of ASF and other livestock pandemics and severely undermine the food systems and livelihoods of rural communities.

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²⁹ Mekong Eye, "Vietnam's pig farms an environmental nightmare", 10 Oct 2022: <https://www.mekongeye.com/2022/10/10/vietnams-pig-farms-an-environmental-nightmare/>

³⁰ GRAIN, "Building a factory-farmed future, one pandemic at a time", 3 Mar 2020: <https://grain.org/en/article/6418-building-a-factory-farmed-future-one-pandemic-at-a-time>