

Assessment African Swine Fever Control Policies and Biosecurity Measures in Southeast Asia

Evidence from: Viet Nam, Philippines, Malaysia, Thailand

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Part 1

Background: ASF in Southeast Asia

1.1 ASF Break Timeline in Southeast Asia



As of 2026, African Swine Fever (ASF) has been spreading across Southeast Asia for eight years.

1.2 Impact on Pig industry in Southeast Asia

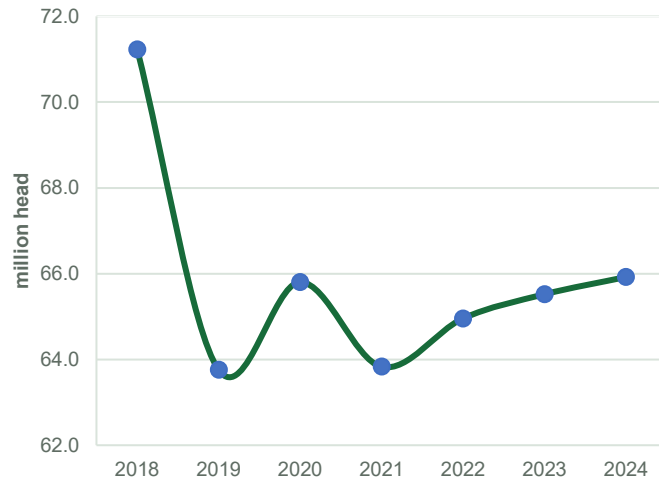


Figure 1.1 Pig inventory in Southeast Asia (2018–2024)

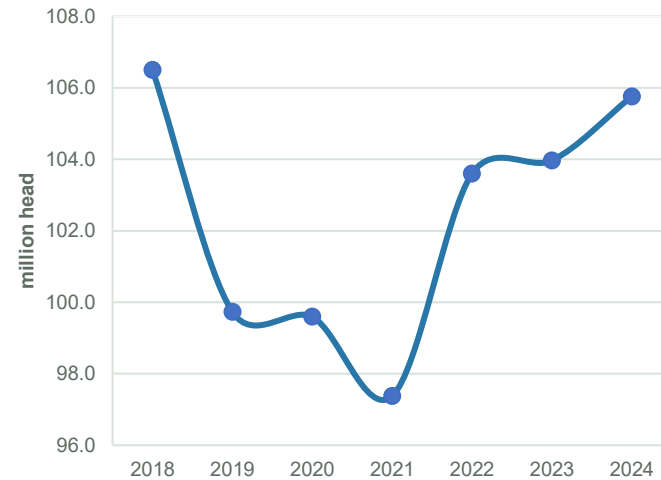


Figure 1.2 Pigs slaughtered in Southeast Asia (2018–2024)

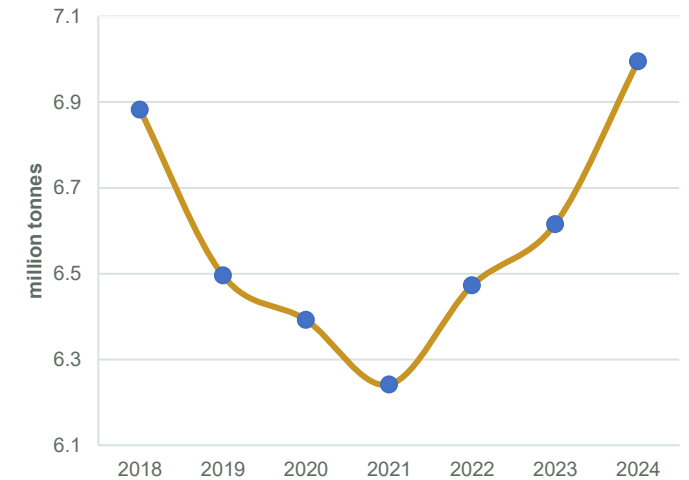


Figure 1.3 Pork production in Southeast Asia (2018–2024)

01 Production Capacity Changes

ASF caused a sharp decline in pig inventories, pig slaughter, and pork production across Southeast Asia, while regional recovery began from 2021.

02 Price changes

Panic selling caused live-pig prices down in the short term; reduced supply then drove prices upward.

03 Producer Structure Transformation

Many small-scale producers exited, accelerating concentration in larger commercial farms.

Part 2

Research Objectives & Methodology

2.1 Research Objectives

01 Policy Evaluation

Identify and analyze the ASF control policies and biosecurity measures adopted in Southeast Asia. Assess their comparative strengths, gaps, and effective measures.

02 Risk Factors

Assess the major ASF risk factors and systemic challenges that constrain effective prevention and biosecurity infrastructure upgrades across countries.

03 Socio-Economic Impact Assessment

Evaluate ASF's impacts on pig prices, production costs for farms, and analyze the investment in biosecurity across different countries.

04 Recommendations

Identify successful ASF control experiences from different countries to provide practical references for improving disease prevention strategies.

2.1 Methodology & Field Survey Design

How the data were used

- **WOAH database 、 FAOSTAT and national outbreak reports**

Trace when and where ASF spread, and identify policy responses, measure changes in pig stocks, slaughter and pork production.

Who we interviewed

Malaysia	12 producers in Selangor, Penang, Perak and Melaka; operating and depopulated farms
Viet Nam	Family farms and integrated companies
Philippines	Government, a large family farm and backyard/community producers
Thailand	Cooperl/TFG integrated enterprise

2.2 Pig Farming Structures and Post-ASF Change in Four Countries

The same disease shock acted on four very different production structures.

COUNTRY	BASELINE FARMING STRUCTURE	STRUCTURE AFTER ASF	MAIN CHANGE
Viet Nam	2018 sow inventory: household farms 77.7%; large enterprises 22.3%.	2023: household farms 62.5%; large enterprises 37.5%.	Rapid concentration toward large integrated enterprises; smallholders remained numerous.
Philippines	2019: backyard farms 63%; commercial farms 37%. Large modern farms were concentrated in Central and Southern Luzon.	2023: backyard farms 67.5%; commercial farms 32.5%.	Commercial share fell; backyard production remained dominant.
Malaysia	2020: highly commercialized—more than 1.75M pigs on 614 commercial farms. Backyard farms were limited and mainly located in Sabah and Sarawak.	2023 update: 491 farms remained	Commercial farms remained dominant, but farm numbers and production capacity contracted.
Thailand	Small-scale farms accounted for about 93% of farms around the outbreak; medium and large integrated firms supplied a major share of pigs.	Commercial farms lead the recovery of pig production capacity after ASF	Recovery strengthened concentration and enterprise-led production.

Sources: PSA; AgroMonitor Viet Nam; DVS Malaysia; Thailand DLD / WOA. H.

Country Assessment

Viet Nam

3.1 Viet Nam: ASF Pathway



3.2 Viet Nam: Impact on Pig industry

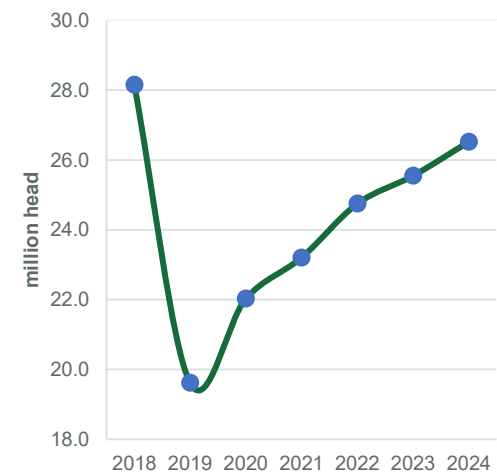


Figure 3.1 Pig inventory in Viet Nam (2018–2024)

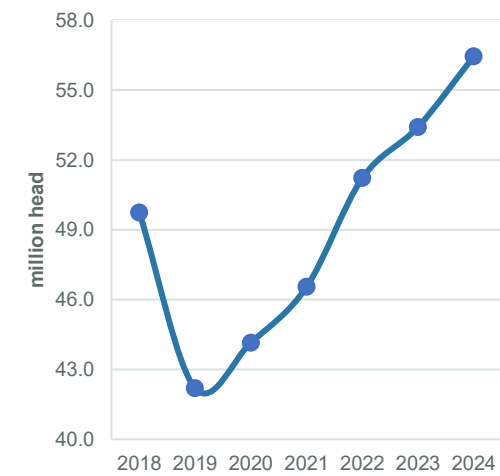


Figure 3.2 Pigs slaughtered in Viet Nam (2018–2024)

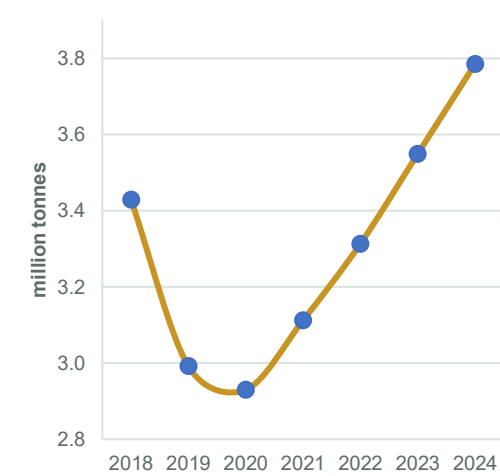


Figure 3.3 Pork production in Viet Nam (2018–2024)

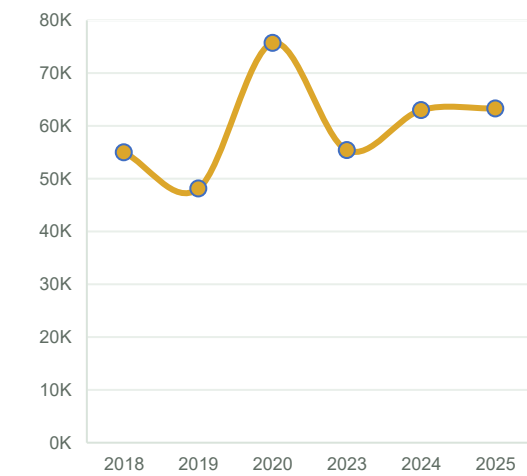


Figure 3.4 Live pig price in Viet Nam (VND/kg)

-5.8%

Pig Stocks

28.15M → 26.52M head
(2018 vs 2024)

+13.5%

Slaughtered Pigs

49.74M → 56.45M head
(2018 vs 2024)

+10.4%

Pork Production

3.43M → 3.79M tonnes
(2018 vs 2024)

3.3 Viet Nam: Transmission Pathways of ASF



Live Pig Transport



Illegal Slaughter



Improper Dead Pig Disposal



Human and vehicle Transport

3.4 Viet Nam: Distinctive ASF Policies

- | | | |
|----|--------------------------------|---|
| 01 | ASF-free targets | The 2020–2025 National Plan targeted 500 ASF-free farms, 50 ASF-free pork chains and broader commune-level disease freedom. |
| 02 | Commercial ASF vaccines | Viet Nam approved NAVET-ASFVAC and AVAC ASF LIVE for nationwide use, followed by DACOVAC-ASF2. |
| 03 | Compensation | Culling compensation was introduced at VND 37,000/kg in 2019 to support farmers and encourage reporting. The scheme was later reduced and restored to VND 40,000/kg during the 2025 ASF reurgence |

3.5 Viet Nam Field Interviews: Family and Small/Medium Farms

All three interviewed producers are shown—each reveals a different level of biosecurity upgrading.

FARM / SCALE	ASF EXPERIENCE / BASELINE	MEASURES ADOPTED	RESULT
Dang Vi Kim 100 sows + 700 fattening pigs	ASF occurred in early 2020 and again in 2025.	After 2020: closed management, separated living and production areas, and family-only entry. After 2025: daily lime/chemical disinfection (VND 1m/application), one-day isolation after returning, and rodent/bird control.	Early recognition and strict isolation reduced spread.
Dang Van Ton 100 sows + 600 fattening pigs	Living and production areas were mixed; traders entered; no personnel isolation. No ASF was reported.	Disinfection increased from 1×/week to 3×/week (VND 120,000/application); quarterly rodent/bird control cost VND 1m.	Routine spending increased, but housing and transport risks remained unchanged.
Hung Yen producer 200 ffattening pigs	Simple, unpaved and mixed layout; reused feed bags; crossed worker/vehicle routes; periodic ASF recurrence.	Lime and spray twice/month; sick and dead pigs were buried on-site; the farm then restocked.	No effective structural upgrade; infection returned after several months.

3.6 Viet Nam Field Interviews: Commercial and Integrated Enterprises

ENTERPRISE / SCALE	ASF EXPERIENCE / BASELINE	SYSTEM / IMPLEMENTATION	OUTCOME / GAP
BAF Company 10m pigs marketed (2023)	Internal control was incomplete; outbreaks occurred in some houses in 2024.	After the 2025 outbreak: intelligent showers, material drying, automated vehicle cleaning, five-level isolation, dedicated transport and monitored loading.	Higher fixed investment; larger losses avoided; cost and profitability maintained.
AFIEX ~4,000 before; now ~2,200	Deaths continued after a three-month empty period and restocking; groundwater was suspected	Immediate isolation; separate sale points (>2 km / 500 m); vehicle cleaning and personnel disinfection.	Recurring mortality and volatile profit.
Sagrifood 70k finishers + 30k sows before	Severe outbreak in Oct 2024; ASF persisted after a one-month empty period and restocking.	Daily disinfection; vehicles and materials cleaned	Inventory fell below 23k finishers and 7k sows; huge loss; recovery incomplete.
Twin Group / New Hope Integrated Viet Nam branches	Three-zone systems, changing rooms, rodent-proof walls and protective netting were installed.	Damaged netting; tire-only vehicle disinfection; chassis/tools missed; low video coverage and incomplete records.	Complete systems on paper, but weak operational execution.

The enterprise evidence refines the two-tier finding: Commercial farms upgraded structurally, while the other cases retained biological, vaccine or execution gaps.

3.7 Viet Nam Policy Assessment: Strengths, Recommendation

STRENGTHS

- Encouraged the establishment of ASF-free zones and disease-free production chains
- Provided preferential loans and financial support to biosecurity-certified farms.

GAPS

- Smallholder awareness and investment remained low.
- Transport, slaughter and carcass disposal were weak links.
- Reporting incentives and confidence in compensation were insufficient.

Recommendation

- Increase financial support and subsidies for small and medium-sized farms.
 - Strengthen control of illegal pig movement and informal slaughter chains through enhanced inter-provincial quarantine and transport supervision.
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Country Assessment

Philippines

4.1 Philippines: ASF Pathway



4.2 Philippines: Impact on Pig industry

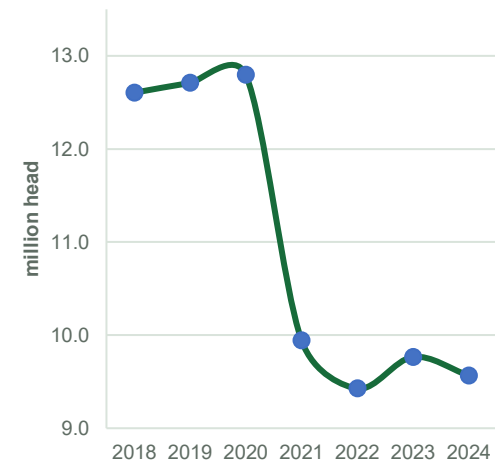


Figure 4.1 Pig inventory in the Philippines (2018–2024)

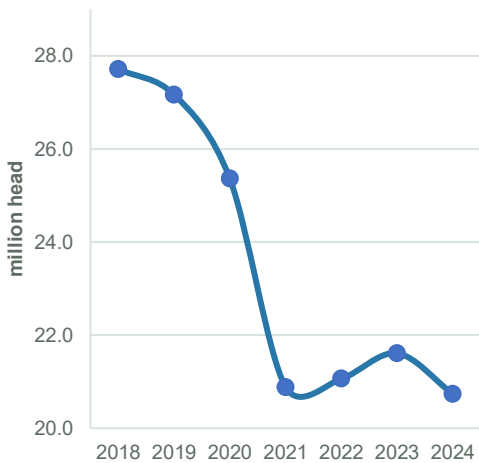


Figure 4.2 Pigs slaughtered in the Philippines (2018–2024)

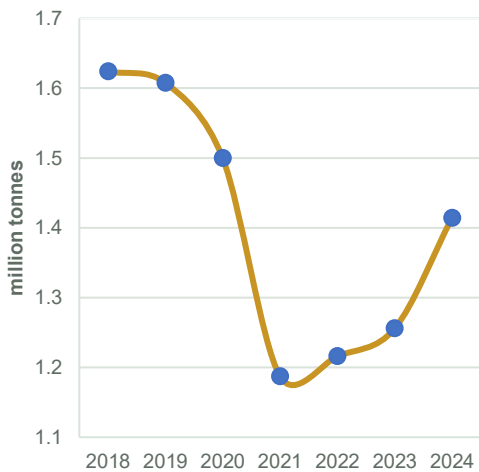


Figure 4.3 Pork production in the Philippines (2018–2024)

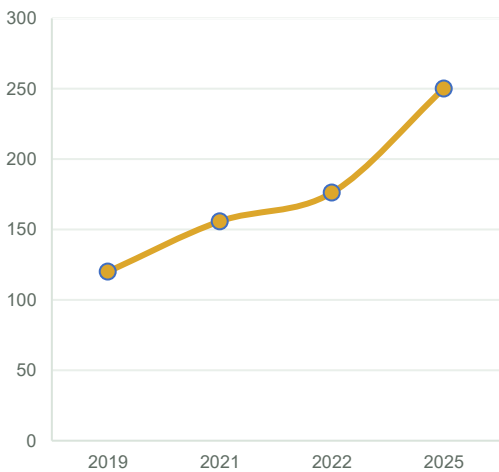


Figure 4.4 Live pig price in the Philippines (PHP/kg)

-24.1%

Pig Stocks

12.60M → 9.57M head
(2018 vs 2024)

-25.2%

Slaughtered Pigs

27.71M → 20.74M head
(2018 vs 2024)

-12.9%

Pork Production

1.62M → 1.41M tonnes
(2018 vs 2024)

4.3 Philippines: Transmission Pathways of ASF



Inter-island Live Pig Transport



Human and Vehicle Transport



Improper Dead Pig Disposal

4.4 Philippines: Distinctive ASF Policies

- | | | |
|----|--|--|
| 01 | BABay ASF Program | Encourage local communities (barangays) to participate in disease surveillance, early detection, and reporting, Trained BBOs provide a local frontline presence |
| 02 | IEC campaigns | Government-led information, education and communication improved ASF knowledge, reporting and preventive behaviour. |
| 03 | Community ASF Biosecurity Intervention (CABI) Program | CABI provides community farmers with basic biosecurity supplies, such as disinfectants and protective equipment. The program helps smallholders adopt affordable biosecurity practices that are suitable for backyard farming systems. |

Source : Philippines official report, FAO

4.6 Philippines: Field survey

INTERVIEWED FARM	ASF EXPERIENCE / BASELINE	BIOSECURITY CHANGE OBSERVED	COST / OPERATING RESULT
Patrick Ong Farm 1,500 sows · 50 staff	ASF infections occurred in 2020 and 2023. Production cost was PHP 110/kg before ASF.	Closed access, restricted entry, own transport, twice-daily disinfection and safe disposal of dead pigs.	Cost rose to PHP 140/kg (+27.3%); losses in 2020/2023, profits in 2021/2022/2025.
Backyard producer 9 pigs · farrow-to-finish	Four suspected sick pigs were privately slaughtered and shared; remaining pigs sold at PHP 150/kg vs ~170 market.	After training: dedicated footwear/clothes, handwashing and showering; clothing disinfected every three days.	PHP 10,000 cost vs PHP 14,000 revenue/pig; PHP 720/L disinfectant lasted four months.
Communities A & B 3 pigs and 13 pigs	Very small herds depended on affordable, practical measures rather than capital-intensive facilities.	Community A separated pigs and avoided swill; both communities used low-cost forage under CABI-linked support.	Starter support made adoption feasible; recurring inputs and follow-up still determine continuity.

4.5 Philippines Policy Assessment: Strengths, Gaps and Recommendation

STRENGTHS

- BABay ASF creates a community surveillance platform.
- IEC campaigns improve awareness and disease reporting.
- Community training plus starter materials changes behaviour.

GAPS

- Backyard last-mile implementation remains uneven.
- Transport, swill control and carcass handling are weak.
- Long-distance inter-island pig transportation increases the difficulty of quarantine and movement control.

Recommendation

- Continue strengthening training programs for smallholder farmers to improve ASF awareness and biosecurity practices
 - Provide low-cost biosecurity tools and practical solutions tailored to the needs of small-scale farms
 - Promote the development of smallholder farmer organizations and improve collective disease prevention capacity through cooperation and scale-based production
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Country Assessment

Malaysia

5.1 Malaysia: ASF Pathway



5.2 Malaysia: Impact on Pig industry

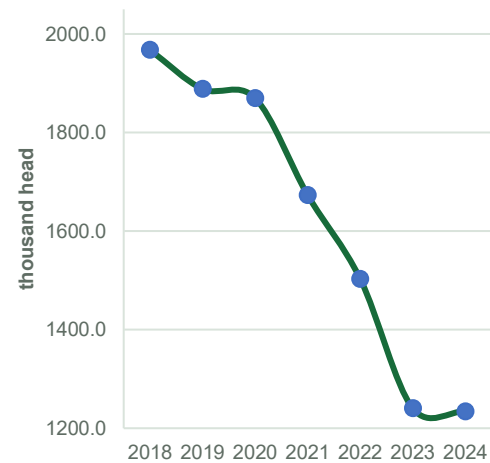


Figure 5.1 Pig inventory in Malaysia (2018–2024)

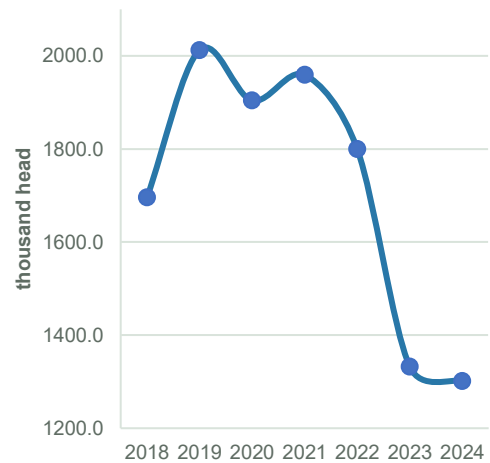


Figure 5.2 Pigs slaughtered in Malaysia (2018–2024)

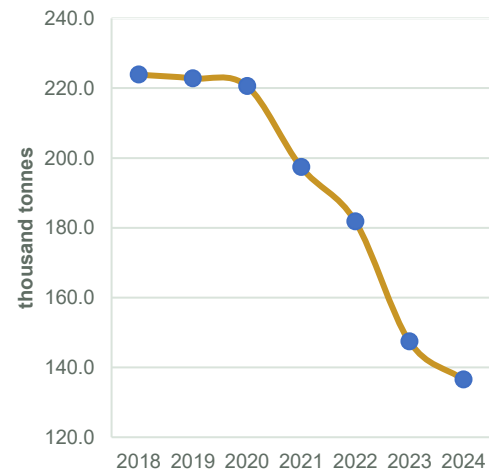


Figure 5.3 Pork production in Malaysia (2018–2024)

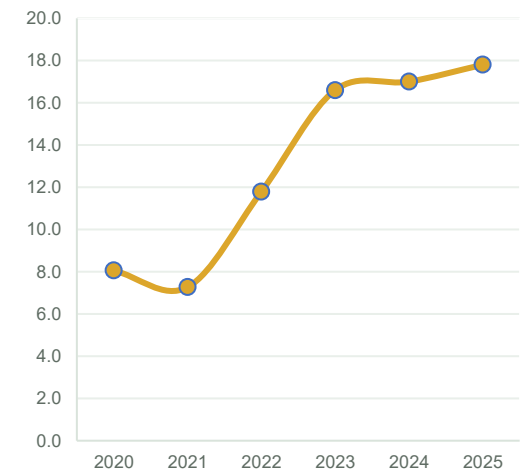


Figure 5.4 Live pig price in Malaysia (MYR/kg)

-34.2%

Pig Stocks

1.87M → 1.23M head
(2020 vs 2024)

-31.6%

Slaughtered Pigs

1.90M → 1.30M head
(2020 vs 2024)

-38.0%

Pork Production

221K → 137K tonnes
(2020 vs 2024)

Sources: FAOSTAT; price series supplied by author

5.3 Malaysia: Transmission Pathways of ASF



Wild Boar



Inter-state Movement of Live Pigs



Human & Vehicle Transmission

Source: Field survey and DVS Malaysia reports



Illegal Cross-border Transport

5.4 Malaysia: Distinctive ASF Control Policies

- | | | |
|----|---------------------------------|--|
| 01 | Early import restriction | Malaysia restricted pig and pork imports from affected sources from December 2018. |
| 02 | Wild-boar control | A 40-day hunting ban in outbreak areas limited activities that could disturb or disperse infected wild boar. |
| 03 | Modern Pig Farming (MPF) | Closed-house production with wastewater treatment is the modernization direction; investment is borne mainly by farms. |
| 04 | Restocking verification | A 42-day empty period, followed by 21 days with sentinel pigs and PCR testing before full restocking. |

5.6 Malaysia: Face to face interviewer



Field interviews, Malaysia

12 producers · 4 states

Selangor, Penang, Perak and Melaka

What operating farms changed

- Closed housing, stricter access control and staff entry procedures.
- External pig handover, self-owned vehicles and more frequent disinfection.
- Wastewater separation and other permanent facility upgrades.

Pig price

PERAK

MYR 17.0–17.8/kg

Cost: MYR 14–15/kg. Profitability was strongest in 2024 and remained positive in 2025.

PENANG

≈ MYR 17/kg

Cost: MYR 13–14/kg. Operating margins remained positive despite higher biosecurity spending.

SELANGOR

MYR 17.0–17.7/kg

Cost: ≈ MYR 12/kg. Temporarily unprofitable in 2019–2020; good returns from 2021 onward.

5.7 Malaysia: Face to face interviewer



Field interviews, Malaysia

A severe shock followed by costly upgrading

PIGS CULLED

9,336 head

Reported by one commercial farm in Penang after the 2023 outbreak.

REINVESTMENT

MYR 6–7m

Subsequent investment in farm upgrading and stronger controls.

ECONOMIC LOSS

> MYR 15m

Direct losses reported by the same affected commercial farm.

MONTHLY DISINFECTION

MYR 15k → 30k

Recurring disinfection expenditure doubled after the outbreak.

MELAKA:

- All three sampled farms had been fully depopulated since around 2022 and remained out of production.
- Producers reported losses of several millions of MYR—and no operating revenue while farms remained empty.

5.8 Malaysia Policy Assessment: Strengths, Gaps and Recommendations

STRENGTHS

- Complete depopulation and safe disposal at infected farms.
- High compensation level supports reporting.
- Strict verification reduces premature restocking.

GAPS

- Restocking route is unclear and the approval process is long.
- Compensation is not always timely.
- Direct support for modernization is limited; the sector receives low policy priority.

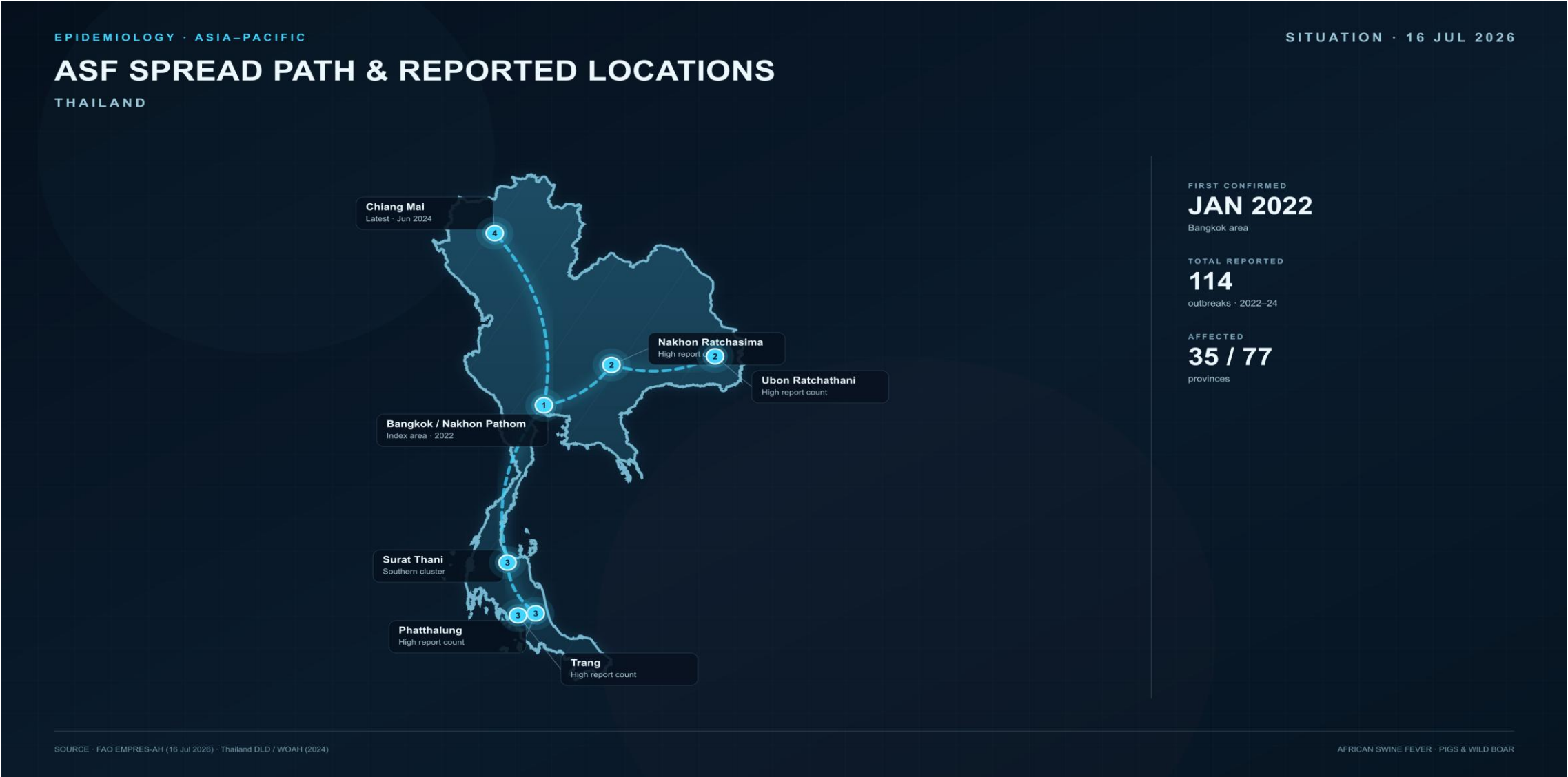
RECOMMENDATIONS

- Publish staged restocking criteria and a clear approval timeline.
- Make compensation time-bound and faster.
- Provide tiered subsidies and low-interest or credit-guaranteed loans.

Country Assessment

Thailand

6.1 Thailand: ASF Spread and Recurrent Pressure



6.2 Thailand: Impact on Pig Production

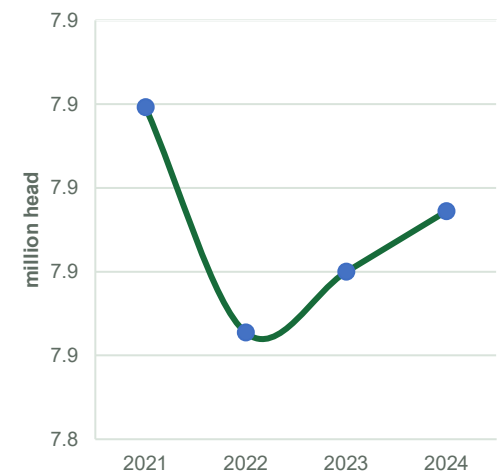


Figure 6.1 Pig sinventory in Thailand (2018–2024)

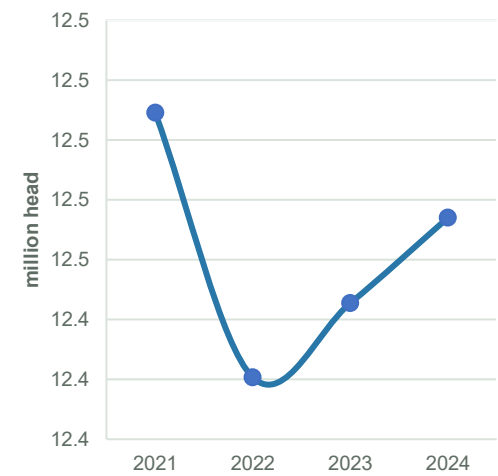


Figure 6.2 Pigs slaughtered in Thailand (2018–2024)

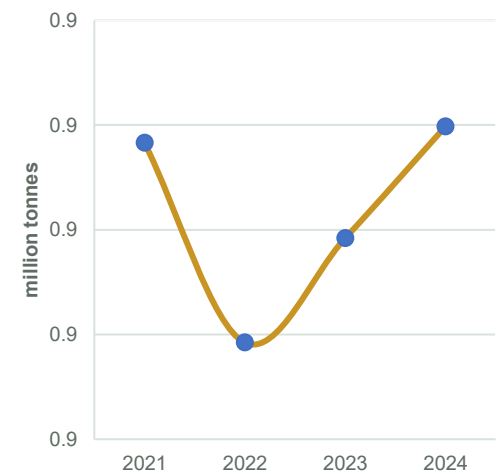


Figure 6.3 Pork production in Thailand (2018–2024)

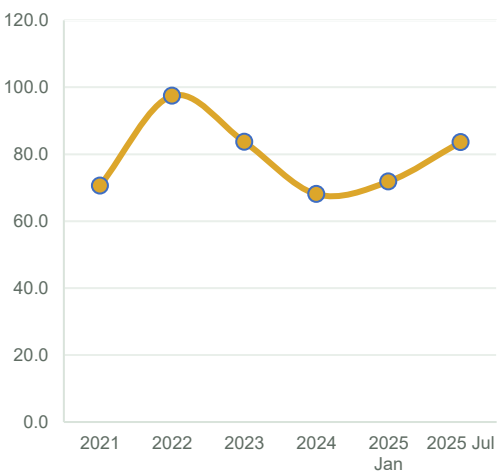


Figure 6.4 Live pig price in Thailand (THB/kg)

+1.0%

Pig Stocks

7.79M → 7.87M head
(2018 vs 2024)

+3.4%

Slaughtered Pigs

12.05M → 12.46M head
(2018 vs 2024)

+3.9%

Pork Production

0.91M → 0.94M tonnes
(2018 vs 2024)

Sources: FAOSTAT; price series supplied by author

6.3 Thailand: Transmission Pathways of ASF



Inter-regional Live Pig Transport



Human and Vehicle Transport



Wild Boar

6.4 Thailand: Distinctive ASF Policies

01

Inadvance contingency plan

The 2019 plan covered preparedness, emergency response and recovery before ASF was officially confirmed.

02

Multi-level “war rooms”

DLD, provincial and district operation centres coordinated information, resources and response activities.

03

“Tooth extraction” culling minimized economic loss

Targeting only ASF-positive pigs for removal while avoiding large-scale blanket culling and reducing economic losses for farms.

6.5 Thailand Field Visit: Cooperl–TFG Biosecurity in Practice

2016 Farm established	1,500 Sows	12,000 Fattening pigs
BIOSECURITY MEASURES OBSERVED		
● Four functional zones; living and production areas fully separated, with no cross-movement between zones. ● Employees showered and changed clothes; drivers and visitors remained outside production areas. ● Independent external loading area and dedicated transport vehicles, followed by washing and disinfection.		● Feed, medicines and other materials entered only after ozone disinfection; procedures were recorded electronically. ● Pig houses followed standardized multi-step cleaning and disinfection; feed, water and air were sampled regularly. ● Paved roads, drainage and rain–sewage separation were combined with pest control and closed feed/transport circulation.
COST OF biosecurity THB 4–5/kg Additional on-farm biosecurity cost	COST of production THB 77–81/kg 2021 production cost; +17% vs 2020	

The case supports Thailand’s conclusion: commercialization helped turn biosecurity requirements into routine farm operations and supported faster recovery.

6.6 Thailand Policy Assessment: Strengths, Gaps and Recommendations

STRENGTHS

- Pre-drafted emergency plan before first outbreak
- Promote Compartmentalization: Develop high-standard biosecurity compartments and closed-loop production systems led by modern integrated enterprises.

GAPS

- Policy frameworks have focused on high-standard compartmentalization systems in large commercial farms, with limited support for biosecurity upgrades among small-scale producers.
- Complex procedures, delayed payments, and insufficient compensation reduce incentives for farmers to report ASF cases.

Recommendations

- Establish rapid and full compensation schemes to incentivize timely ASF reporting and reduce outbreak concealment.
 - Increase subsidies and financial support for small and medium-sized farms to upgrade and modernize production facilities.
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Four Country Strengths Conclusion

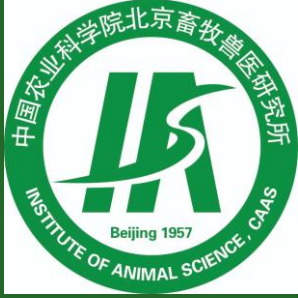
COUNTRY	BEST-PERFORMING POLICY / PRACTICE	WHAT OTHER COUNTRIES CAN LEARN
MALAYSIA	Modern Pig Farming (MPF): promote the construction of closed-house pig farms.	Make closed housing the foundation of farm modernization, supported by controlled access and wastewater management.
VIET NAM	Establish ASF-free areas, farms and ASF-free pork production chains.	Link disease-free farms with an integrated disease-free production chain—not isolated farm upgrading.
PHILIPPINES	Train backyard producers through BABay ASF, Barangay Biosecurity Officers (BBOs) and community-based IEC.	Bring practical biosecurity training and follow-up directly to barangays and household producers.
THAILAND	Use “tooth-extraction” culling: remove ASF-positive pigs instead of applying blanket culling.	Control infection while avoiding unnecessary culling and reducing economic losses for producers.



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Thank you !

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