Pacific Horticultural & Agricultural Market Access Plus Program

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Containing African Swine Fever in Papua New Guinea

PHAMA Plus Performance Story

Australian Aid

NEW ZEALAND FOREIGN AFFAIRS & TRADE
Manatū Aorere

Containing African Swine Fever in Papua New Guinea - PHAMA Plus Performance Story

Client: Department of Foreign Affairs and Trade

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Executive Summary

African Swine Fever (ASF) was confirmed in Papua New Guinea in March 2020, rapidly spreading through the Upper Highlands and threatening household stock holdings that underpin food security, cash income, and cultural obligations. Working alongside PNG's National Agricultural Quarantine and Inspection Authority's (NAQIA) government-led response, PHAMA Plus contributed to containing ASF and supporting efforts to eradicate outbreaks in many areas, helping protect an estimated AUD 760 million in national pig assets and the livelihoods of around 340,000 households.

Figure 1. One of the many checkpoints set up during the ASF outbreak.

While this report focuses on highlighting PHAMA Plus's specific interventions, these efforts were just one contribution to a broader, multi-agency response led firmly by NAQIA in vital collaboration with partners including the Food and Agriculture Organization (FAO), The Pacific Community (SPC), Australia's Department of Agriculture, Fisheries and Forestry (DAFF), and CSIRO's Australian Centre for Disease Preparedness (ACDP).

PHAMA Plus rapidly shifted from preparedness to emergency surge support, then helped stabilise control measures in the 5 infected provinces (Southern Highlands, Enga, Hela, Western Highlands and Jiwaka) to protect coastal regions from onward spread. It enabled NAQIA through a practical package of support: a "virtual command centre" providing real-time technical guidance to the Chief Veterinary Officer and field teams; rapid deployment and logistics support (including Personal Protective Equipment (PPE) and mobility costs); and the saturation-level 'Stopim ASF' risk communication campaign, which tackled rampant misinformation (including beliefs linking pig deaths to *sanguma*/sorcery), strengthened reporting and compliance, and reduced the risk of social tension. Notably, the response also generated an estimated AUD 2.37 million in unintended economic benefits through community checkpoint markets.

The benefits didn't stop in PNG. Through collaboration with SPC, PHAMA Plus ensured that PNG's hard-won lessons were not isolated. The program facilitated the transfer of knowledge to Fiji, Samoa, and the Solomon Islands, helping these nations develop their own ASF Preparedness and Response Plans before the virus could reach their shores. The containment benefits also protected Australia's pork industry, worth AUD 6.9 billion to the Australian economy (2024–25).

Beyond immediate containment, PHAMA Plus laid foundations for longer-term management by progressively strengthening NAQIA systems—improving surveillance and information management, building workforce capability, and supporting enduring institutional upgrades (including enhanced laboratory capacity and biosecurity reforms). Many of these strengthened systems were codified

through the *Biosecurity Act 2025*, heavily influenced by PHAMA Plus's partnership with NAQIA on ASF as well as the Program's broader trade and market access-related work.

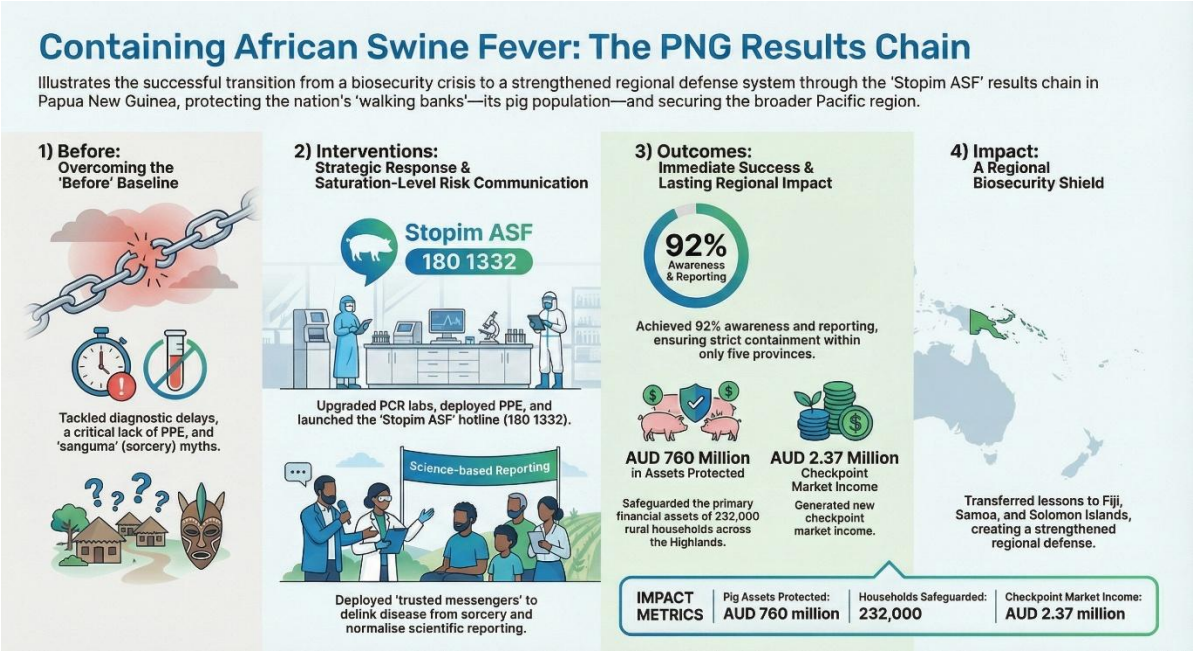


Figure 2. Containing African Swine Fever: the PNG Results Chain.

Contents

Acronyms

ABARES	Australian Bureau of Agricultural and Resource Economics and Sciences
ACDP	Australian Centre for Disease Preparedness
ACIAR	Australian Centre for International Agricultural Research
ASF	African Swine Fever
AUD	Australian dollar
CSIRO	Commonwealth Scientific and Industrial Research Organisation
CVO	Chief Veterinary Officer
DAFF	Department of Agriculture, Fisheries and Forestry
DFAT	Department of Foreign Affairs and Trade
EA	Environmental Assessment
FAO	Food and Agriculture Organization
GEDSI	Gender Equality, Disability, and Social Inclusion
IATA	International Air Transport Association
MPI	Ministry of Primary Industries
NAHFTL	National Animal Health and Food Testing Laboratory
NAHIS	National Animal Health Information System
NAQIA	National Agricultural Quarantine and Inspection Authority
NSW	New South Wales
NTF	National Task Force
NZ	New Zealand
OCVO	Office of the Chief Veterinary Officer
PCR	Polymerase Chain Reaction
PHAMA	Pacific Horticultural and Agricultural Market Access Program
PHOVAPS	Pacific Heads of Veterinary and Animal Production Services
PNG	Papua New Guinea
PGK	PNG Kina
PPE	Personal Protective Equipment
PPTP	Pacific Paravet Training Program
PVS	Performance of Veterinary Services
SOPs	Standard Operating Procedures
SPC	The Pacific Community
TAD	Transboundary Animal Diseases
UNRE	University of Natural Resources and Environment
VfM	Value for Money
WOAH	World Organisation for Animal Health

1 The Threat of African Swine Fever

Figure 3. The use of PPE helps prevent the spread of ASF.

African Swine Fever (ASF) is a highly contagious viral disease of domestic and wild pigs. It doesn't infect humans, but it can kill a very high proportion of infected pigs (80–95% by varying estimates) and causes major livelihood and food security shocks where pigs are important. It is transboundary and can spread through live or dead pigs and pork products. It can also spread through contaminated feed and on shoes, clothes, vehicles, food scraps, knives, and other equipment. The experience of China, which lost 50% of its national herd in 3 years since the first case was detected in 2018, is illustrative of the potential impact of the disease (Piesse, M., 2021).

There is no approved treatment or vaccine available for ASF. During outbreaks, control can be difficult and must be adapted to the specific epidemiological situation of the affected area. Sanitary measures that can be applied include early detection and slaughter, zoning and compartmentalisation, movement controls, strengthened surveillance and on-farm biosecurity practices.

African Swine Fever was confirmed in Papua New Guinea's Highlands in early 2020 (around Mendi–Munihu in Southern Highlands), triggering emergency response actions and disease area declarations by PNG's NAQIA. Protecting PNG from ASF matters because, in many Highlands communities, pigs are the ultimate household asset — a literal 'piggy bank' that underpins cash income, nutrition, and customary exchange (including bride price and compensation). With pigs often kept in low-biosecurity, free-ranging systems, the virus can spread rapidly once introduced, turning an animal health event into a broader livelihoods and socio-cultural shock. Prior to the outbreak, most pig-farming households in rural PNG were not aware of ASF, its symptoms, or how to manage it. This lack of knowledge fuelled rumours that the disease was caused by *sanguma* (sorcery/witchcraft) and created conditions that could trigger tribal conflict in the volatile Highlands region. The potential national loss has been estimated at around AUD 760 million (approximately PGK 1.8 billion), and the outbreak context included estimates of infection reaching roughly 20,000 pigs, illustrating the scale of risk to households and community stability.

1.1 Why Fighting ASF in PNG is a Frontline Defence for Australia

Australia has remained free of ASF, but the Department of Agriculture, Fisheries and Forestry (DAFF) classifies it as a major biosecurity threat. With no approved vaccine available and a mortality rate that can kill around 80% of infected pigs, an incursion on Australian soil would be devastating. It would not only decimate pig producers but would also inflict severe harm on trade relationships and the broader national economy.

While the initial explosive spread of ASF through Asia in 2018–2019 has stabilised in some regions, the global threat remains dynamic and persistent. Far from being a historical event, the virus continues to find new pathways into previously unaffected territories, with recent first-time detections in Singapore (2023) and Sri Lanka (late 2024) underscoring its relentless ability to jump borders. Even in countries with established endemic status, the virus is not dormant; resurgences in domestic herds and persistent circulation in wild boar populations continue to challenge control efforts. This volatile global landscape serves as a stark reminder that containment is not a one-time achievement but a continuous operation.

To mitigate this risk, Australia employs a strategy of 'offshore measures'. DAFF, in conjunction with the Department of Foreign Affairs and Trade (DFAT) and international partners like the Food and Agriculture Organization (FAO), actively monitors global disease trends and works with neighbouring countries like PNG, Solomon Islands, Fiji and Timor-Leste to build local capacity and facilitate regular communication and reporting. By providing training and supporting disease surveillance, Australia is effectively helping to build an early warning system beyond its own borders.

This partnership is a critical risk reduction strategy. Reducing the disease pressure in PNG directly lowers the risk to Australia. Given the close proximity and constant movement of people and goods through the region, a strong biosecurity wall in PNG—underpinned by robust detection and containment systems—is the most effective way to ensure the virus is not carried, directly or indirectly, across the Torres Strait.

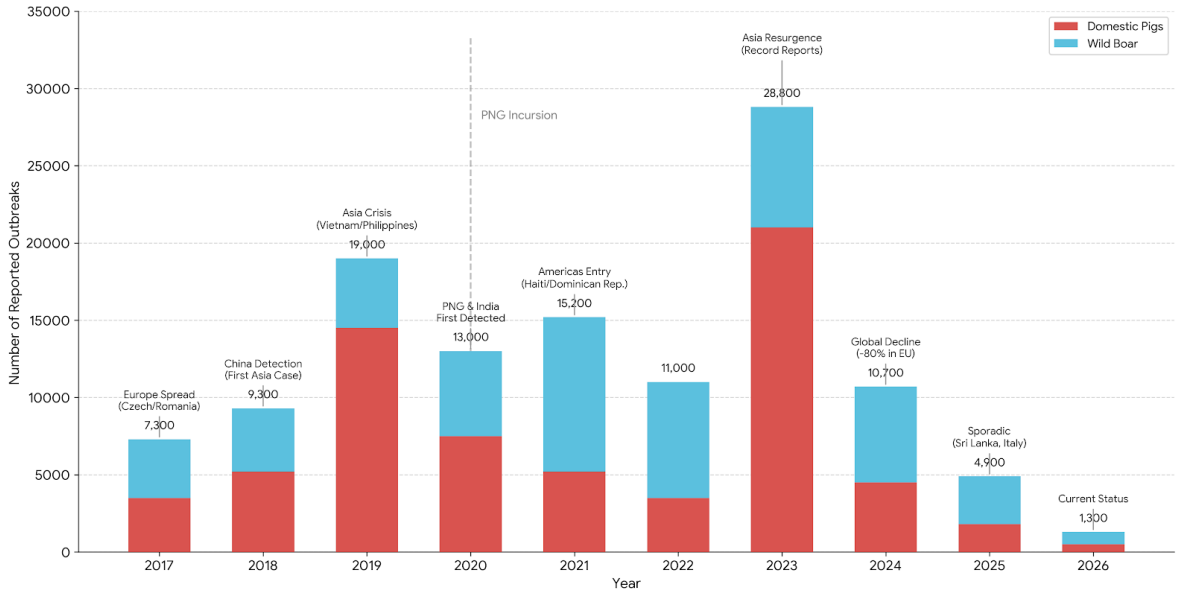


Figure 4. Global ASF Outbreaks Reported to WOAH (2017-2026)

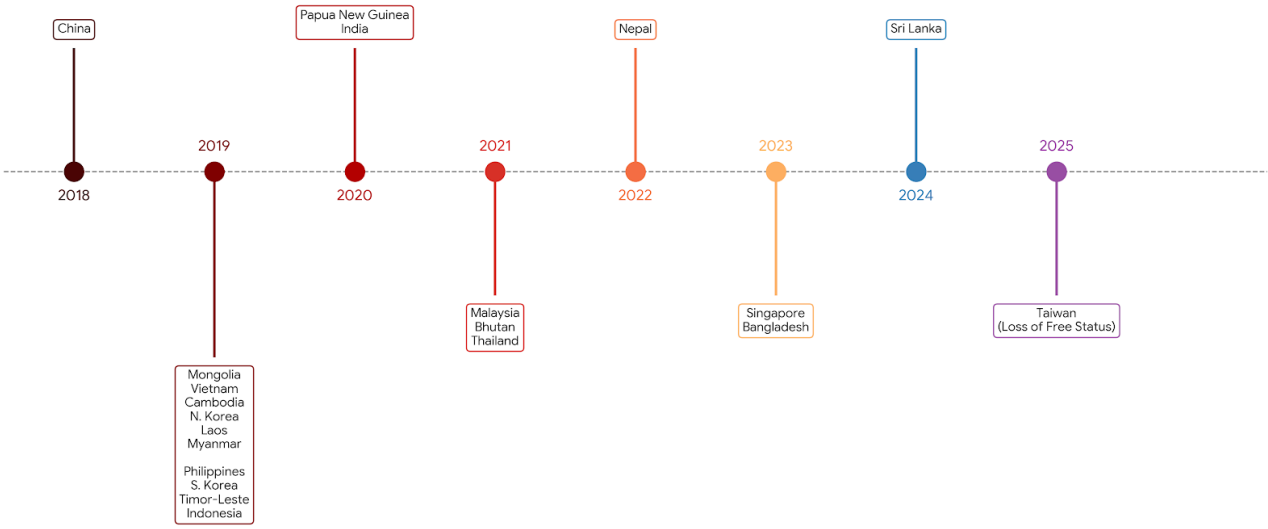


Figure 5. Timeline of ASF Expansion in Asia (2018-2025)

Figure 6. Confining pigs in pens or behind fences minimise contact with feral pigs, or free ranging pigs that may be infected with the ASF virus.

Australia's Pig Industry

Australia's pork industry is economically significant and highly vulnerable to ASF. It is estimated that the industry contributes around AUD 6.9 billion to the Australian economy (2024–25), supports roughly 36,000 full-time equivalent jobs across farming, processing and wholesaling, and includes 4,708 registered pig production sites with a national herd of about 285,388 sows. On the production side, Australian Bureau of Statistics figures indicate around 5.79 million pigs slaughtered and roughly 466,000 tonnes of pig meat produced in 2023–24.

ASF is considered one of Australia's highest-consequence animal disease threats. Economic modelling by Australian Bureau of Agricultural and Resource Economics and Sciences (ABARES) illustrates how quickly costs escalate even under "contained" scenarios: a small outbreak that is ultimately eradicated is estimated to cost the economy AUD 101–AUD 127 million over 5 years for a feral pig outbreak or AUD 117–AUD 263 million over 5 years for a domestic pig outbreak. The largest risks arise if ASF cannot be eliminated and becomes entrenched: ABARES estimates an endemic ASF scenario could cost approximately AUD 0.4–AUD 2.5 billion.

A key reason ASF is so disruptive is the structure of Australia's pig supply chain. ABARES highlights that the industry has limited 'redundancy'—pigs must move through the system on schedule—so movement restrictions can quickly create on-farm backlogs, animal welfare issues, and major knock-on costs. In addition, Australia has a small number of abattoirs, many operating near capacity, meaning disruptions at any point can cascade nationally. Even where direct production losses are limited, market effects matter: ABARES notes that reduced consumer demand driven by perception and uncertainty (despite ASF not being a food safety risk) can add more than AUD 100 million in costs in some scenarios.

New Zealand's Pig Industry

New Zealand's pork sector is modest in scale but still strategically important for domestic food supply and rural livelihoods. Stats NZ and NZ Pork note that around 580,000–620,000 pigs are produced each year, concentrated in the South Island. From a biosecurity perspective, ASF is treated as a high-consequence threat and preventing entry is a top priority, with a strong focus on reducing likely pathways. For example, New Zealand doesn't allow the import of live pigs, tightly regulates feeding meat or food waste to pigs and stresses rapid reporting and early detection.

2 ASF Arrives in PNG

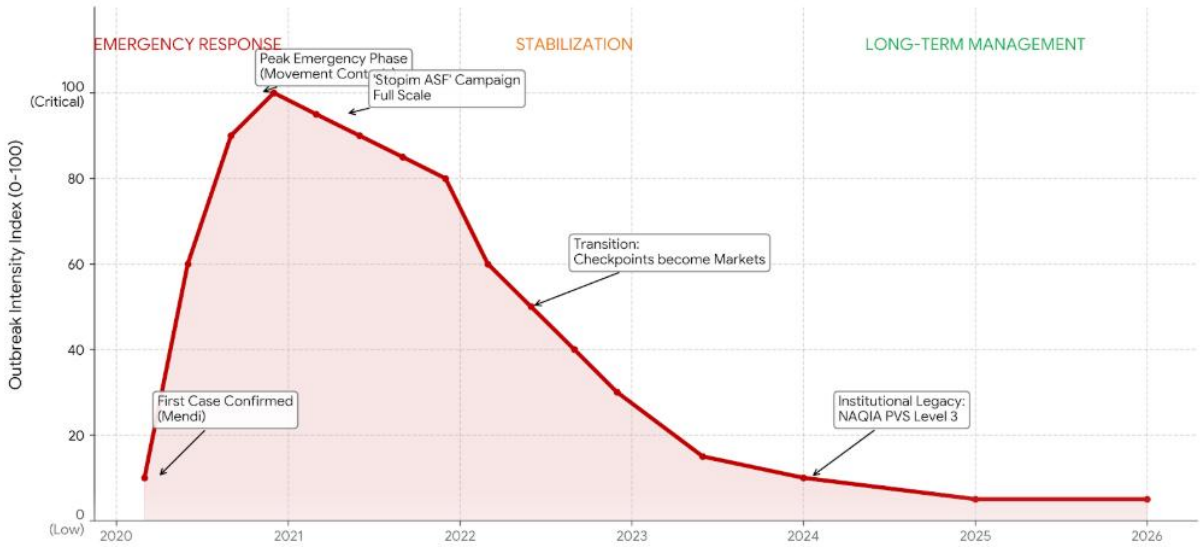


Figure 7. Timeline of ASF Containment in PNG (2020-2026)

2.1 The Initial Incursion and Emergency Response (2020)

The ASF crisis in Papua New Guinea began in early 2020 when unusual pig deaths were reported in the Highlands. Following laboratory confirmation of the virus in the Mendi–Munihu district of the Southern Highlands in late February to early March, the government moved quickly. On 26 March 2020, a Ministerial declaration designated the Upper Highlands provinces as a 'Disease Area', formally activating NAQIA's emergency animal disease response.

From 2020, the response logic, led by NAQIA and supported through PHAMA Plus, was 'classic ASF control': containment, movement control, surveillance, and risk communication, because eradication is extremely difficult in low-biosecurity production systems without sustained resources. With PHAMA Plus's help, PNG's NAQIA established a national command-and-control function (a National Disease Control Centre and Task Force through the Office of the Chief Veterinary Officer) and stood up local disease control centres—including hubs in Mendi and Wabag—to coordinate field operations and enforce controls. This included strategic road checkpoints and permitting/clearance arrangements for movements in disease-free areas, with intensive community engagement to stabilise compliance.

Operationally, 2020 was dominated by rapid delimiting work and containment lines. NAQIA ran Phase 1 delimiting surveys (1–14 April 2020), installed containment measures (20 April–10 May 2020), and ran Phase 2 surveys (11–27 May 2020) to define infected vs disease-free areas. By May–November 2020, NAQIA reported ASF was contained within the declared Disease Area; however, by December 2020 there were signs of spread into Western Highlands and Chimbu, with January 2021 confirmation in Western Highlands and Jiwaka (and a point infection in Chimbu considered contained/burnt-out). This containment-first approach was also about protecting "at-risk but uninfected" provinces and coastal regions from onward spread.

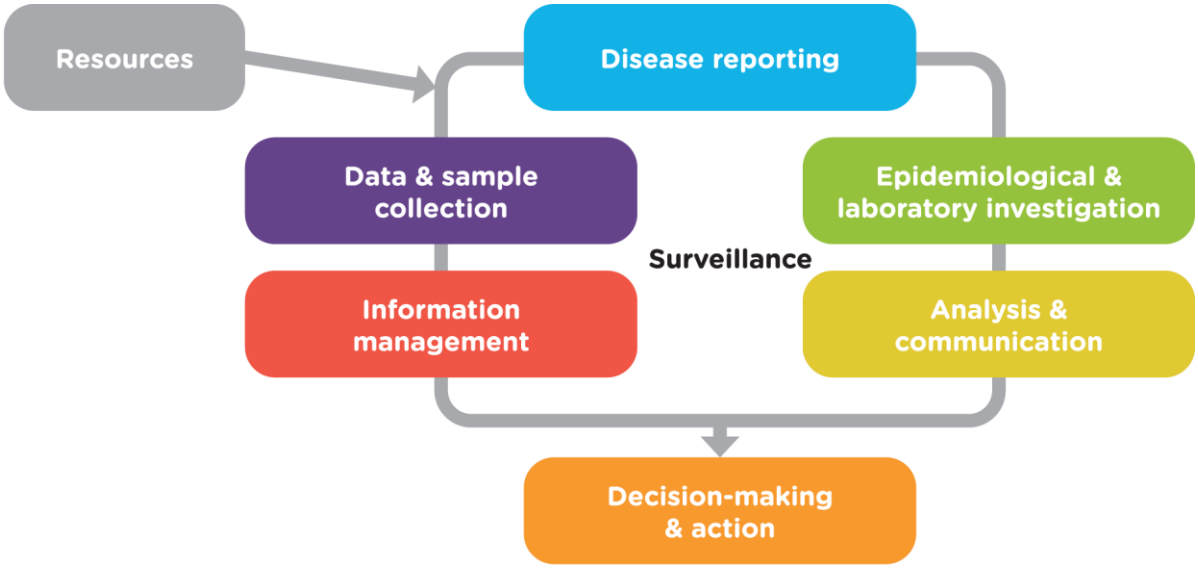


Figure 8. The Response
Essential elements of a surveillance system (from OIE)

2.2 Containment and Capacity Building (2020–2022)

From 2020 to 2022, external support increasingly shifted from 'surge response' to strengthening the core systems needed for prevention, eradication and containment over the long haul: diagnostics, surveillance, data systems and workforce capability.

Throughout 2020 and 2021, the core response relied on a network of checkpoints to enforce strict movement restrictions on pigs and pork products, aiming to lock the virus within the affected zones. Simultaneously, a major effort was launched to upgrade national biosecurity capabilities. From 2020 to 2022, external partners—including PHAMA Plus, DAFF, CSIRO and ACIAR—provided critical support to strengthen diagnostics, surveillance systems, and operational response capacity. This period saw the deployment of training and equipment designed to enable more rapid detection in the field, moving the country from a reactive footing to a more structured, evidence-based management system.

Figure 9. The ASF road checkpoint at Muinde.

2.3 Current Status and New Threats (2022-2025)

NAQIA announced an official stand-down of the emergency response phase on 12 April 2024, transitioning to 'normalcy' and consolidating value chain resilience and recovery arrangements.

At the time of writing in January 2026, the FAO classified the country into 3 distinct zones: the **Infected Zone** (Hela, Southern Highlands, Western Highlands, Enga, Jiwaka), a **Buffer Zone** (Eastern Highlands, Simbu), and a **Non-Infected Zone** covering the rest of PNG. However, late 2025 brought renewed concern. In October, suspected cases were reported in the Eastern Highlands districts of Kainantu and Obura-Wonenara, prompting NAQIA to deploy an investigation team. To gauge the true extent of the virus's persistence, NAQIA launched a three-week active prevalence survey across the Upper Highlands starting in November 2025—the results are yet to be published at the time of writing, but no new outbreaks have been declared.

The persistence of ASF in PNG remains a material biosecurity threat for the wider region. Pacific partners have historically tightened border monitoring in response to PNG's status, reflecting a high perceived risk of spread via pork products and traveller movement. For Australia, which has never had a domestic outbreak, the stakes are particularly high. The Australian government continues to maintain strengthened border controls and public guidance—specifically targeting compliance around pork products—to reduce the risk of an incursion from its closest neighbour.

Table 1. Summary of the number of outbreaks, cases and animal losses caused by ASF in the different world regions from January 2022 to November 2025.

	Outbreaks		Cases		Losses*
	Domestic pigs	Wild Boar	Domestic pigs	Wild Boar	Domestic pigs
Africa	1,128	6	127,308	0	119,716
Americas	65	0	467	0	9,412
Asia	7,480	109	325,919	542	566,349
Europe	5,293	27,302	682,915	42,964	1,623,627
Oceania	0	0	0	0	0
Total	13,966	27,417	1,136,609	43,506	2,319,104

**Losses (deaths + animals killed and disposed of): this figure refers to losses in the establishments affected by the outbreaks and it does not include the animals culled in areas around the outbreak for controlling the disease.*

3 Rationale for PHAMA Plus Intervention

Prior to the outbreak, NAQIA had been implementing ASF preparedness activities since October 2019 with support from FAO, Australia and New Zealand through PHAMA Plus and others. Once the March 2020 outbreak was confirmed, NAQIA activated its emergency animal disease response plan. This response involved tracing, containing, and eliminating the disease as it was detected. It required the immediate mobilisation of NAQIA field teams to conduct delimiting surveys and the launch of a large-scale awareness-raising campaign among pig farmers and the wider community. Resourcing this response, which required additional technical, financial and logistical support, represented a major challenge to NAQIA. It also occurred while the Government of PNG was responding to the grave human health challenge and resource implications of COVID-19. Against this backdrop, NAQIA reached out to international development partners for support. An agreement was reached with Australia and New Zealand to support NAQIA's emergency response work through the PHAMA Plus program. The prompt and coordinated response by NAQIA, supported by PHAMA Plus, meant that the country could contain and control the disease outbreak. This case study examines the steps taken to contain the disease and the impact of this on smallholder farmers and the broader livestock sector in PNG.

'PHAMA Plus had the right people with the right skill sets, and the right level of political economy. Our technical package enabled us to give the advice, and from that we were able to affect change when we discussed the issues with the Chief Veterinary Officer who had the legal powers.'—Sidney Suma, previous PHAMA Plus Country Manager in PNG.

Figure 10. Field visit to the highlands by NAQIA staff, for the collection of blood samples.

4 Partnership Approach: Government Led, Program Enabled

PHAMA Plus's partnership model in PNG was built around a government-led response headed by NAQIA, with PHAMA Plus playing an enabling, catalytic role alongside other development partners—first to help contain ASF immediately, and then to strengthen longer-term preparedness and response systems (surveillance, emergency response, labs, communications).

NAQIA remained firmly in the "driver's seat", retaining full statutory authority and decision-making power through the Chief Veterinary Officer (CVO) and the Emergency Animal Disease Task Force. PHAMA Plus supported operations and implementation, providing the 'unseen' logistics, funding, and technical backstopping that allowed NAQIA's strategy to be executed rapidly—filling critical operational gaps that government procurement systems could not address quickly enough during the dual crisis of ASF and COVID-19.

'The ASF task force and coordination meetings brought together a range of stakeholders, such as GoPNG, PHAMA Plus, DFAT, vets, and more, and those meetings were really useful.' —Nina Eliseo, DFAT, Australian High Commission to PNG.

The partnership was not ad hoc: NAQIA and PHAMA Plus had collaborated since 2015. This coordination extended beyond PNG's borders, with PHAMA Plus acting as the integrator for broader Australian and New Zealand technical support. The program facilitated a 'whole-of-region' approach, linking NAQIA with high-level technical expertise from DAFF and CSIRO's Australian Centre for Disease Preparedness (ACDP). While PHAMA Plus managed the on-ground implementation and logistics, these agencies provided scientific validation and 'lab twinning' support to upgrade diagnostic capabilities.

At the whole-of-government level, PHAMA Plus's regional collaboration architecture included formal engagement mechanisms with DAFF and ongoing links with New Zealand's Ministry of Primary Industries (MPI) as a key regulatory partner, as well as broader coordination platforms that bring together agencies and networks working across Pacific biosecurity and market access systems. Furthermore, the program coordinated with FAO to deliver stock inspector training, ensuring that all partners—donors, technical agencies, and multilateral bodies—fed into a single, cohesive National Response Plan rather than duplicating efforts.

'The PHAMA Plus team had a great relationship with NAQIA … and more broadly had strong linkages with DAFF and CSIRO's ACDP, and were able to bring those skills and networks.' —Lauren Quinn, DFAT, Australian High Commission to Papua New Guinea.

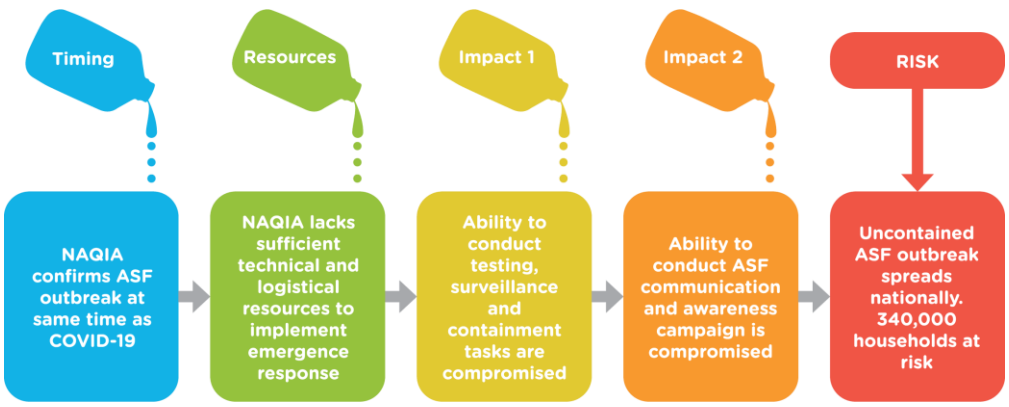


Figure 11. 'Before' Scenario for NAQIA ASF response - without PHAMA Plus support

5 PHAMA Plus Interventions

5.1 Emergency response: surge support in partnership with NAQIA (2019–2020)

When ASF hit, NAQIA faced the outbreak with limited surge capacity, constrained resources, and competing pressures (including the practical disruption of COVID). PHAMA Plus pivoted quickly from preparedness into frontline response, focusing on the core biosecurity objectives of containing the outbreak and preventing further spread, while supporting NAQIA to pursue eradication where feasible in newly affected areas.

A defining feature of this phase was remote command. With international experts unable to fly in, PHAMA Plus effectively set up a 'virtual command centre': Animal Health Specialists provided near real-time guidance to the CVO via WhatsApp and Zoom, and drafted the tasking notes that guided NAQIA field teams day-by-day. Alongside this technical backbone, PHAMA Plus funded the logistics that made response operational—rapid deployments, tracing and sampling, PPE and consumables, and the practical coordination needed to keep response activity moving.

Misinformation was also a major threat multiplier. Communities widely believed the sudden pig deaths were caused by *sanguma* (sorcery), creating fear and the risk of social tension. PHAMA Plus funded the 'Stopim ASF' campaign as a saturation-level risk communication strategy that delinked the disease from sorcery, reduced the risk of social violence, and gave farmers a clear scientific explanation for what was happening — while reinforcing reporting pathways and basic outbreak control behaviours.

'We were very impressed with Sidney Suma (PHAMA Plus PNG Country Manager at the time) and the team. They had excellent contacts and relationships with NAQIA, and were able to get so much done. The way that Mark (PHAMA Plus PNG staff) and Sidney were able to provide targeted and focused support to NAQIA was very impressive.' — Nina Eliseo, DFAT, Australian High Commission to PNG.

Personal protective equipment (PPE) and disinfection measures are vital in the fight against animal diseases such as African Swine Fever (ASF) and viral infections. In April 2021, PHAMA Plus provided essential items and equipment (disposable surgical gowns, aprons, overalls, shoe covers and hand gloves, needles, syringes and blood tubes) to PNG's National Agriculture Quarantine and Inspection Authority (NAQIA) for its ASF response.

According to PNG's first female vet, NAQIA's Dr Tania Areori, 'Our work was limited by the shortage of available PPE. In the absence of PPE, the risk of staff spreading ASF from disease areas is high.'

'PPE, provided by PHAMA Plus, significantly reduced the risk of staff spreading the disease between sites. Using PPE also helps farmers to have confidence in NAQIA, provincial staff and organisations. When people see that we are taking this seriously and have all these protocols that we need to follow to limit the transmission risk, they also realise the importance of biosecurity.

Dr. Tania Areori, NAQIA

Figure 12. Examples of awareness materials developed through the PHAMA Plus Program.

5.2 Containment: 'hold the line' in the Highlands to protect the coast (2020–2022)

Once the initial surge was in place, the response shifted into a more structured containment phase. The operational focus was on 5 infected provinces—Southern Highlands, Enga, Hela, Western Highlands, and Jiwaka—with a clear strategic intent: protect the coastal regions (and other disease-free areas) from onward spread.

PHAMA Plus support during containment combined 3 mutually reinforcing streams:

- Technical direction (surveillance design, delimiting/prevalence work, epidemiological interpretation, standard operating procedures (SOPs) and tasking guidance),
- Movement controls and enforcement support (checkpoints, tracing, field mobilisation), and
- Public communication at scale (mass distribution of materials and regular CVO updates) to sustain compliance, reduce rumours, and normalise practical prevention behaviours.

Stories from the field: Grace Mark

Like other pig farmers in the Upper Highlands, Grace Mark from Anglimp, South Waghi District, Jiwaka Province, has started adopting the good husbandry practices that are critical for controlling the spread of ASF. A single mother with two children, Grace is also a coffee farmer but still operates at a subsistence level and relies on the income from pig sales to pay for school fees and other cultural obligations such as 'bride price'.

Grace lost 6 out of her 9 pigs to ASF. Relatives and neighbours from her village and neighbouring community also lost pigs to the disease in late 2020. Grace initially thought her pigs were dying due to *'sanguma'* or sorcery but had also heard that there was a pig disease in the area. After calling the ASF toll-free number, a NAQIA technical team came and tested her pigs. They gave her advice on the good husbandry practices and containment measures she should adopt.

Grace says, 'My pigs are fenced-off now with a notice to members of my community to refrain from coming too close to them. It is my hope that this deadly disease is completely eliminated from my village.'

Before the ASF outbreak, the price of an average pig was PGK 4,000 or up to PGK 6,000 depending on the size. As the number of ASF cases increased in her community, Grace and her family assisted in raising awareness about the disease, especially during gatherings. She encourages everyone to implement the good husbandry practices taught to her by the NAQIA animal health officers and makes sure everyone is aware that the pig deaths are caused by an infectious disease and not by *'sanguma'*

5.3 Long-term management and capacity building (2022–2025)

From 2022 onwards, PHAMA Plus support increasingly moved from 'doing response' to building the system that can manage ASF as an ongoing risk — prevention, preparedness, rapid containment, and recovery — and applying those same capabilities to other transboundary animal diseases.

The most significant legacy was technical independence. PHAMA Plus supported the upgrade of the National Animal Health and Food Testing Laboratory (NAHFTL), enabling PNG to conduct Polymerase Chain Reaction (PCR) testing in-country. NAQIA no longer needed to ship every sample to Australia for confirmation — a step change in speed, confidence, and national self-reliance.

The program also supported the drafting of a modern *Biosecurity Bill*, ensuring that systems built during the crisis (surveillance, information management, response protocols, roles and powers) are enshrined in law, not dependent on ad hoc arrangements. The Bill passed through Parliament to become the *Biosecurity Act 2025*. At the same time, PHAMA Plus contributed to strengthened the 'plumbing' of sustained response: information systems (including the National Animal Health Information System (NAHIS)), surveillance approaches (risk mapping/sentinel reporting), workforce pathways (including paravet strengthening), and ongoing training so response capacity is institutional rather than personality-driven.

Figure 13. Demonstrating animal restraint and blood extraction during a training session.

Technical	• Animal Health Specialist support (technical backstopping to NAQIA). • Tasking notes for NAQIA field teams. • Real-time remote technical support to field teams (e.g., WhatsApp). • Disease updates to the Chief Veterinary Officer; technical guidance at the provincial level. • Diagnostics and epidemiological interpretation. • Technical and administrative support to the Task Force & Technical Working Group. • ASF delimiting and prevalence surveys; boundary setting of infected/infested areas. • Reviews of the Emergency Animal Disease Plan, including technical guidelines and SOPs. • Data capture and development support for NAHIS (National Animal Health Information System). • Risk mapping, sentinel reporting and surveillance systems. • Lab capability support (specimen handling/process improvement; scoping/prioritisation/inception) and collaboration with ACDP/DAFF. • Ongoing technical advisory assistance to NAQIA's emergency response team (Phase II). • A coordination role working with other donors to develop synergies that benefit NAQIA on ASF. • A coordination role linking remote support from Australian and New Zealand Government departments into NAQIA.
Logistics	• AUD 1.6m (NAQIA flights, accommodation and transport). • AUD 170,000 personal protective equipment (PPE) and consumables. • Support from the PHAMA Plus PNG Biosecurity Manager on an ongoing basis. • Operational support for rapid mobilisation of NAQIA officers for tracing and response in affected areas. • Support to community checkpoints and associated movement controls. • Border control and movement restrictions supporting the halt of pig trading in infected areas. • NAQIA in-kind contribution reported as > AUD 780,000 toward implementation.
Communication & Awareness	• AUD 1.2m for the design and print of banners and information packs. • 680,075 hard copies of ASF posters, banners and info packs produced. • 69 separate communication products developed. • 130 staff and organisations distributed materials across PNG. • Monthly Chief Veterinary Officer updates / official notices in national newspapers. • Intensive awareness campaign reported as reaching/benefiting >275,000 households. • Risk communications to raise awareness and reduce misinformation (including messaging to delink ASF from "*sanguma*" to reduce violence risks). • Strengthening NAQIA communications systems: monthly info supplements and transparent ASF work programs via the CVO office/taskforce arrangements.
Capacity Building	• Provide support to the Secretariat of the National Task Force/National Disease Control Centre via the PHAMA Plus PNG Biosecurity Project Manager. Field data collection and management. • Laboratory and field diagnostic capacity building (including deployment of lab/plant health staff into fieldwork). • Provincial stock inspector training (including collaboration with FAO, plus broader stock inspector training referenced in later materials). • Emergency response planning strengthened through "real life" ASF scenarios (and subsequent plan revisions emphasising preparedness and resilience). • Dedicated technical support to the first female veterinary officer. • Development of a biosecurity policy and bill/legislation (system-level strengthening). • Paravet workforce strengthening: paravet curriculum support and engagement with training partners (e.g., UNRE; Charles Sturt University); NAQIA staff enrolled in paravet training to address vet shortages. • Long-term strategy work: Regional Strategy on Transboundary Animal Diseases (TADs), including ASF.

6 From Sorcery to Science: Changing Attitudes and Practices to ASF

In the Highlands of Papua New Guinea, pigs are far more than livestock; they are currency, culture, and food security. Consequently, the NAQIA and PHAMA Plus-supported interventions had to go far beyond simple 'awareness raising'. It required a sophisticated psychological strategy designed to move entire communities along a critical pathway: from Knowledge (hearing about the disease) to Attitudes (accepting new rules), and finally to Practice (changing daily habits). The role of women as community gatekeepers made was essential to culturally grounded and effective approaches.

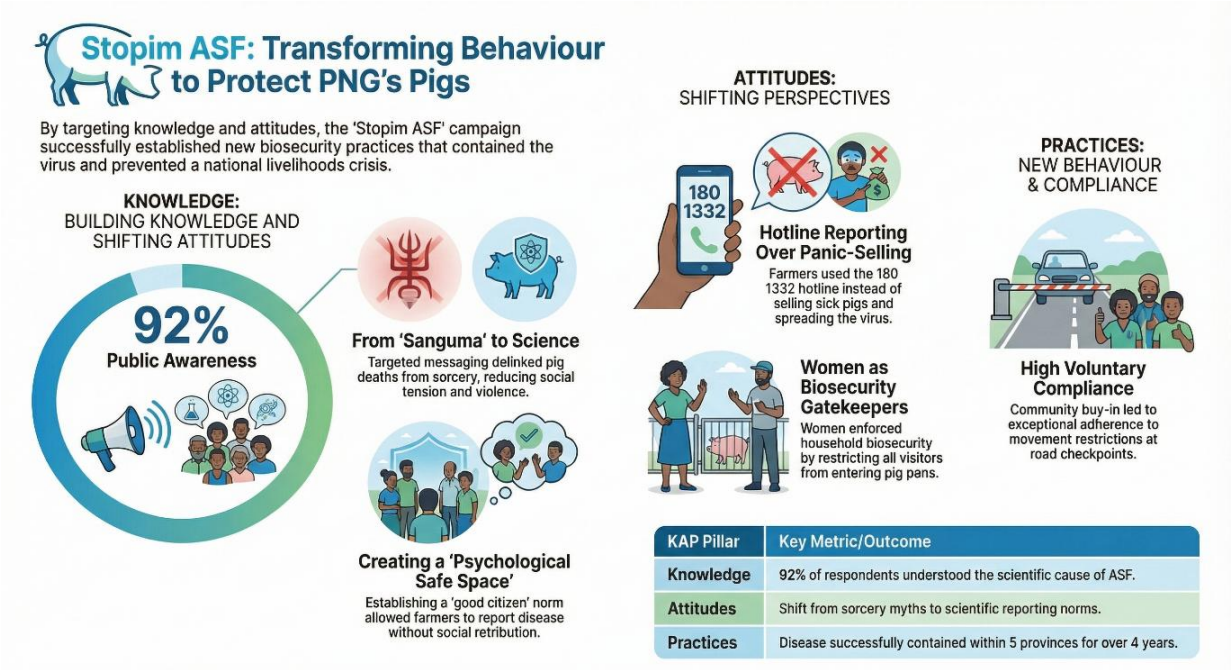


Figure 14: Knowledge, Attitudes and Practices Changes

6.1 The Cultural Pivot: Confronting the *'Sanguma'* Myth

The first and most dangerous barrier was not the virus itself, but the interpretation of it. Early in the outbreak, the sudden mass death of pigs was widely attributed to *'Sanguma'* (sorcery). This superstition sparked social unrest and violence, particularly targeting women, while driving the disease underground as fearful farmers hid their sick animals.

To counter this, PHAMA Plus supported NAQIA in a sensitive cultural pivot. Instead of relying solely on technical experts, NAQIA and PHAMA Plus deployed 'trusted messengers'—local leaders and extension officers—armed with scientifically accurate, culturally grounded materials. This approach successfully delinked ASF from the supernatural. By shifting the narrative from sorcery to science, the intervention didn't just reduce the risk of violence; it created a psychological 'safe space' where farmers could report sick animals to authorities without fear of social retribution—a shift that was fundamental to establishing the cooperation needed for surveillance.

'The risk was not just about the death of pigs and the spread, but also the economic impact, the potential for increase in domestic violence, and the impacts on marginalised groups like people with disabilities because of the belief the pigs have died because of sorcery or acts of God.' —Sidney Suma, previous PHAMA Plus Country Manager in PNG.

6.2 Building a New Norm: 'Stopim ASF'

With the cultural foundation laid, in collaboration with NAQIA, the program launched a massive saturation campaign to embed a new social contract. Backed by an investment of AUD 1.2 million in communication materials, the 'Stopim ASF' brand dominated the Highlands across radio, TV, and community forums.

The results were widespread. A 2021 Knowledge, Attitude, and Practice study confirmed that **92%** of respondents had heard of ASF, proving the message had penetrated the deepest rural communities. Crucially, this awareness translated into action. The campaign established reporting as a 'good citizen' norm, with the promotion of the toll-free hotline (**180 1332**) leading communities to actively report cases rather than panic-selling their stock, which would have spread the virus further.

This buy-in became the physical firewall of the response. In PNG, physical barriers alone are rarely enough to stop movement; community consent is essential. The checkpoints (initially 16, reduced to 4) were not just enforcement points but centres of intense face-to-face advocacy. Because farmers now understood the risk to their own livelihoods, compliance with movement restrictions was exceptionally high. The proof of this behavioural change lies in the data: despite the high transmissibility of ASF, the disease was successfully contained within the declared provinces for over 4 years. The failure of the virus to reach the coastal regions was a feat that relied on farmers voluntarily adhering to the bans.

6.3 Gender-Inclusive Biosecurity

Finally, the response recognised a critical reality of village life: women are the primary carers for pigs, responsible for feeding and cleaning. However, this role placed them at distinct risk. Early in the outbreak, the sudden mass death of pigs was frequently attributed to *sanguma* (sorcery), which sparked social unrest and a severe risk of domestic violence specifically targeting women.

Applying a GEDSI (Gender Equality, Disability, and Social Inclusion) lens, the behavioural change strategy specifically targeted these 'gatekeepers'. A purely technical approach would not have worked; instead, the program utilised a culturally grounded strategy by deploying 'trusted messengers'—local leaders and extension officers—to engage directly with female farmers. This face-to-face engagement with village gatekeepers was the only way to turn broad awareness into daily practice change. The communication materials deliberately depicted women not just as helpers, but as key decision-makers in animal health.

By delinking the disease from sorcery, the campaign created a psychological "safe space" where women could change their daily habits without fear of social retribution. This empowerment ensured that the technical training reached the hands of those actually doing the work, enabling women to enforce household biosecurity measures—such as restricting visitors to pig pens—and cementing the final line of defence at the village level.

Figure 14. Examples of awareness materials developed through the PHAMA Plus Program.

How PNG's First Female Vet Helped Contain a Crisis

Stories from the field: Grace Mark

When Dr. Tania Areori graduated in 2020 as Papua New Guinea's first female veterinarian, there was no time for celebration. She returned home to a biosecurity emergency: ASF had breached the Highlands. Dr. Areori was deployed immediately to the frontline. Her early days with NAQIA were defined by the chaos of the emergency phase.

"The NAQIA response in the communities was following up on cases, doing the testing, mostly chasing the disease—tracing back and tracing forward of where the sick pigs came from," she recalls. "From my own experience, it was terrifying as I was a new grad…but experiencing what we had learnt in school through ASF was great."

Source: Courtesy Australia Awards, https://www.australiaawardspng.org/2023/01/16/breaking-new-ground-for-women-in-png/

As the initial chaos settled, the strategy shifted. Dr. Areori was instrumental in the field in moving the response from reactive 'chasing' to proactive 'containing'. This involved the complex technical work of delimiting the virus and establishing the zoning system that would ultimately save the coastal provinces.

Dr. Areori is clear that technical skill alone wasn't enough; speed was the currency of survival. In a government system where procurement can be bureaucratic and slow, the partnership with PHAMA Plus proved to be the decisive factor.

"The government procurement system to get things done quickly, particularly in an emergency phase, would have been very slow. PHAMA Plus helped to get people and resources to the field very quickly… With a highly infectious disease and cultural challenges, the outcome would have been very different without the quick response… The disease was able to be contained in the highlands, which is just amazing."

As PNG's first female vet, Dr. Areori brought a new dynamic to NAQIA's field teams. While biosecurity in the Highlands is traditionally male-dominated, her presence offered 'different experiences and perspectives', particularly valuable when engaging with the women who are often the primary carers for village pigs. Despite her fears as a pioneer, she found a supportive culture within the agency.

"I was really welcomed, and people in NAQIA worked really well with me," she says.

Dr. Areori finished with NAQIA in November 2024. She now works as a veterinarian for the New South Wales land councils and Department of Primary Industries, applying the skills honed in the PNG Highlands to protect Australian sheep and cattle livestock—a testament to the legacy of the response.

7 Economic Benefits of Avoiding Pig Losses

In the Highlands of Papua New Guinea, the pig is not merely livestock; it is the central currency of cultural life. With approximately 883,000 to 1.5 million pigs raised largely in free-ranging village systems, the regional asset base is enormous. A single animal can sell for PGK 5,000, skyrocketing to reportedly PGK 20,000 during significant political or cultural events. Consequently, the containment effort was a high-stakes economic rescue. PHAMA Plus modelling warned that an uncontrolled outbreak with a 90% mortality rate could wipe out approximately AUD 1 billion from the 7 Highlands provinces in a single wave—a loss that would have been compounded had the disease become endemic.

By holding the 'Red Line' and confining the virus to the initial 5 provinces, the intervention prevented this freefall, directly safeguarding between AUD 670 million and AUD 760 million in value that would otherwise have been lost to the disease.

These macro-economic figures translate directly to household survival. In the Highlands, pigs function as 'walking banks'—the primary reserve for school fees, bride prices, and emergency funds. While 66,257 households sadly suffered losses within the infected zones, the containment strategy shielded the savings of over 232,000 households, ensuring that families retained their financial safety nets during the simultaneous economic shock of COVID-19. While the virus did cause losses, the biosecurity cordon successfully prevented the devastation from cascading to the coastal regions and the non-infected Highlands provinces.

In a final, unintended dividend, the biosecurity infrastructure itself evolved into an economic engine. The roadside checkpoints, originally established as regulatory barriers, spontaneously transformed into vibrant market hubs. A 2024 study found that communities at key locations like Barano and Muinde generated over AUD 2.37 million by selling produce to travellers stopping for inspection, turning a crisis response into a thriving new income stream for local women and youth.

8 Sustainability: Strengthening NAQIA

The ASF response served as a 'live fire' exercise that supported the modernisation of PNG's biosecurity architecture. Support from development partners such as PHAMA Plus, DAFF, ACDP and FAO went beyond plugging immediate gaps; it enabled NAQIA to transition from ad hoc emergency measures to permanent, improved systems—effectively institutionalising the lessons learnt during the crisis.

- **Strengthened governance and policy:** The transition to long-term management is anchored in the development of the Emergency Animal Disease Plan and the passage of the new *Biosecurity Act 2025*, ensuring the legal framework exists for future responses. This institutional strengthening is validated by data: NAQIA recently achieved a 76% score in Performance of Veterinary Services (PVS) competencies, a metric that quantifies the agency's growth from a struggling authority to a capable biosecurity guardian.

- **Digital Transformation:** Prior to the outbreak, disease reporting was often paper based. The program has driven a complete overhaul of this ecosystem, contributing directly to National Animal Health Information System (NAHIS) capacity development. This includes the implementation of electronic data capture, risk mapping, sentinel reporting, and delimiting and prevalence surveys that provide a real-time view of the country's health status. These systems were built through field-based disease investigation and data capture experience gained during the outbreak, and are now being formalised into a web-based information management system with support from DAFF and WOAH.

- **Laboratory and Diagnostic Independence:** Perhaps the most critical technical asset is the upgrade in diagnostic capability. The program supported the full lifecycle of laboratory strengthening—from initial capacity scoping, prioritisation, and inception workshops to the tangible delivery of equipment. Through collaborations with ACDP, DAFF and PHAMA Plus technical advice,

NAQIA has established robust in-country field and laboratory diagnostic capabilities (including PCR). This means NAQIA can now detect and confirm transboundary diseases independently, rather than relying solely on external help.

- **A Strengthened Workforce:** Beyond the immediate stock inspector trainings, PHAMA Plus contributed to advocacy and support for a formalised paravet curriculum. This included the development of a regional veterinary capacity paper and strategic engagement with Charles Sturt University and the Papua New Guinea University of Natural Resources and Environment (UNRE) on the Pacific Paravet Training Program (PPTP). This ensures that the next generation of biosecurity officers is being trained *now*, not when the next crisis hits.

- **Institutionalised Communications:** Finally, the program has permanently enhanced how NAQIA talks to the nation. Moving beyond ad hoc announcements, PHAMA Plus supported the development of monthly information supplements and ensured the publication of transparent ASF work programs through the Office of the Chief Veterinary Officer and the National Task Force. By establishing a communications strategy that engaged all forms of media in the country, NAQIA has transformed from a quiet regulator into a visible, trusted public authority.

'If ASF were to happen today, they would be much better prepared than back in 2019. We assisted in reviewing the legislation to incorporate lived experiences and lessons from the response. We worked with NAQIA to develop SOPs for their response plans, which they now have in place in case of an emergency or outbreak. There is more capacity in the labs for surveillance and diagnostics. And there is an ongoing twinning program with NAQIA and DAFF. So the capacity has been built, and the changes are sustainable.' —Sidney Suma, previous PHAMA Plus Country Manager in PNG.

'Notwithstanding the success of the ASF intervention itself, sustainability is a challenge in PNG more broadly. There will be some legacy from the intervention, particularly at the individual NAQIA staff level.' —Lauren Quinn, DFAT, Australian High Commission to Papua New Guinea

Update since April 2024 – No Outbreaks and Improved Sovereign Capability
Following the official stand-down of the emergency response in April 2024, NAQIA transitioned to long-term disease management. As of January 2026, the virus remains officially confined to five Highlands provinces, though suspected cases in the Eastern Highlands in late 2025 prompted rapid active prevalence surveys.

Crucially, Papua New Guinea is now vastly better equipped to manage ongoing biosecurity threats. The legislative foundation was cemented with the passage of the *Biosecurity Act 2025*. Operationally, NAQIA has achieved diagnostic independence with in-country PCR testing. Spin-off support continues to build ongoing preparedness, including formalising the National Animal Health Information System (NAHIS) into a permanent web-based platform, and establishing a formalised paravet training program to secure the future workforce. Reflected in a recent 76% Performance of Veterinary Services score, NAQIA has strengthened its ad hoc emergency measures into more sustainable biosecurity readiness.

9 Supporting ASF Resilience Across the Pacific

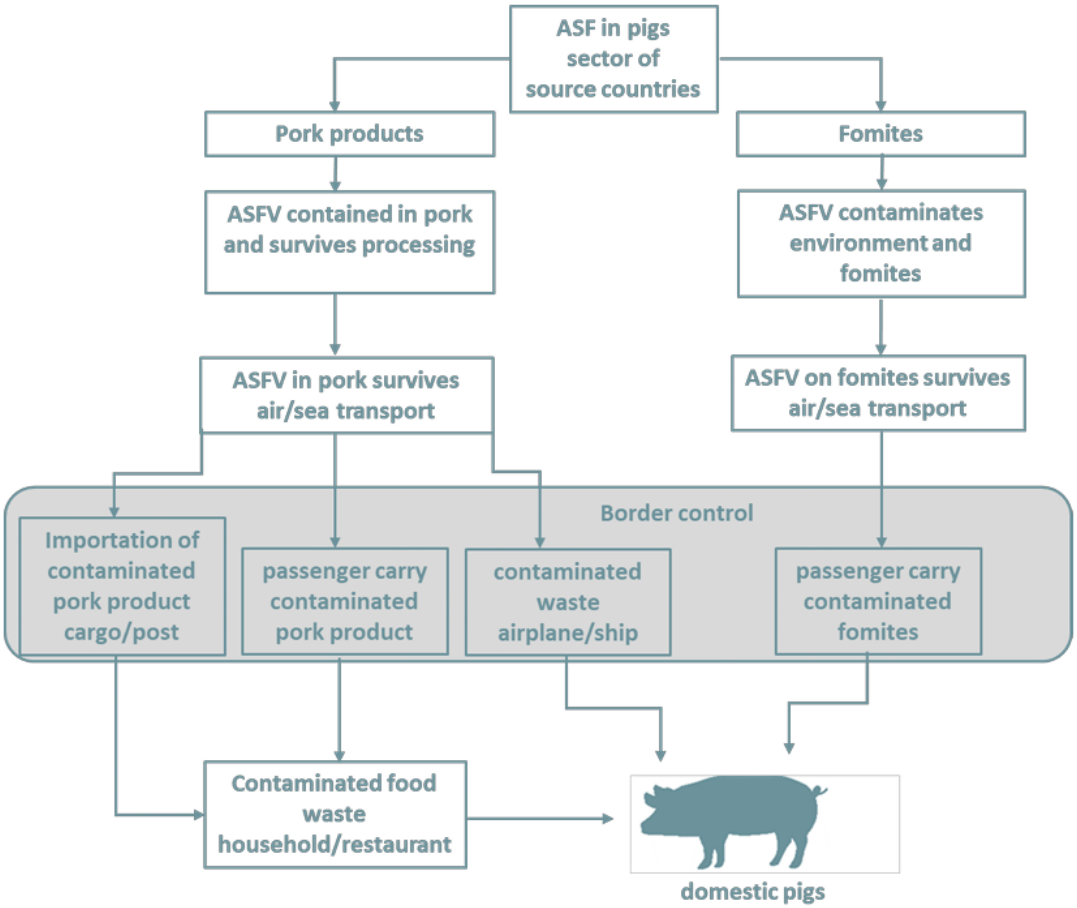
By 2024, Papua New Guinea's battle against ASF had transformed from a national emergency into a critical regional asset. The 'Stopim ASF' materials, containment protocols, and surveillance strategies developed in the rugged Highlands were repackaged and adapted into a Regional Strategy on Transboundary Animal Diseases (TADs). This shift marked a strategic evolution for PHAMA Plus, moving from reactive crisis support to proactive regional preparedness.

Leveraging PHAMA Plus's broader partnership with the Pacific Community (SPC), the collaboration on Animal Health Preparedness (African Swine Fever) ran from 2020–2022 and explicitly covered diagnostics and testing, GEDSI-responsive risk communication, revitalising the Pacific Heads of Veterinary and Animal Production Services (PHOVAPS) network, developing a regional animal health framework and One Health approach, supporting engagement with GF-TADs, and supplying rapid diagnostics plus training (including International Air Transport Association (IATA) training for packaging/transport of samples) to member countries.

This collaboration with PHAMA Plus and SPC ensured that PNG's hard-won lessons were not isolated. The program also facilitated the transfer of knowledge to Fiji, Samoa and the Solomon Islands, helping these nations develop their own ASF Preparedness and Response Plans before the virus could reach their shores. For example:

- Fiji, Samoa and Solomon Islands developed their own National ASF Response Strategies, Action Plans, Surveillance Strategies and Biosecurity Codes of Practice for Rearing Pigs.
- A discussion Paper on Relief and Recovery Mechanisms to Support Owners of Animals Affected by Emergency Animal Disease Outbreaks in Fiji was developed for BAF.
- Fiji integrated the risk communication models from PNG to educate farmers on early detection.
- The Solomon Islands adopted similar surveillance training to protect its village-based pig systems.
- PHAMA Plus and SPC procured 1,000 rapid test kits, with 200 units each supplied to Fiji, Samoa, Solomon Islands, Tonga and Vanuatu.
- Delivered training on surveillance and the use of kits, with a reported total of 80 livestock/biosecurity/agricultural officers.

This 'whole-of-region' approach, championed by the PHOVAPS, is focused on effectively creating a biosecurity shield across the Pacific. SPC's own reporting notes that, in collaboration with PHAMA Plus, SPC consolidated member priorities into a Pacific Animal Health and Production Framework and revived PHOVAPS with a new charter endorsed in 2021—providing an enduring mechanism for regional animal health leadership and information-sharing that is consistent with GF-TADs coordination approaches. By treating PNG as the frontline classroom, PHAMA Plus and SPC have reduced the risk of future incursions, ensuring that the next outbreak—wherever it may be—is met with a tested, ready-made defence system rather than panic or uncertainty.



Source: FAO, 2020, "A risk assessment for the introduction of African Swine Fever into the Pacific Island countries".

Figure 15. The risk of pathway of African Swine Fever virus into the Pacific Island countries

10 Lessons Learnt

1. **The ‘Dividend of Defence’ (Economics):** Containment is high-yield asset insurance, not just a cost. Investing AUD 7.7 million to protect over AUD 670 million in assets proves that early intervention delivers a return on investment of nearly 100:1.

2. **The ‘Containment First’ Formula (Strategy):** With no vaccine available, the international standard—quarantine, aggressive tracing, and surveillance—remains the backbone of defence. In resource-constrained settings, the priority is not ‘perfect’ biosecurity everywhere, but a ruthless focus on locking down infected areas to protect disease-free zones.

3. **The ‘Catalytic’ Partnership Model (Governance):** Success is improved with a ‘Government-Led, Program-Enabled’ structure where the national authority retains command. PHAMA Plus acted effectively by staying in the engine room—providing rapid logistics and funding—collaborating and coordinating with other development partners such as DAFF, ACDP, FAO, WOAH and more.

4. **Treat ASF as a Market System Problem (Value Chains):** Control efforts must engage the entire commercial chain—including traders, butchers, and feed producers—who can otherwise act as risk amplifiers. Behaviour change ‘sticks’ best when compliance is linked to immediate commercial incentives, such as access to safer supply chains, rather than just regulatory enforcement.

5. **The ‘Twin-Track’ Strategy (Behaviour):** High awareness alone does not guarantee compliance; it requires a "Twin-Track" approach. Mass media broadens knowledge, but deep, face-to-face engagement with village ‘gatekeepers’ (especially women) is the only way to turn that knowledge into daily biosecurity habits.

6. **Regional Standardisation (Replication):** A ‘Pacific Standard’ beats isolated national responses. By packaging PNG’s hard-won protocols into a regional toolkit with SPC, neighbouring nations like Fiji and Samoa were able to adopt ready-made defence plans immediately.

7. **Sovereign Capability is the Exit Strategy (Sustainability):** The ultimate goal of emergency aid must be its own obsolescence. Transitioning from reliance on external experts to ‘sovereign capability’—such as in-country PCR testing and new laws—ensures the system survives when the donor funding ends.

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12 Evidence Matrix

Performance story section	Key messages in brief	Primary data	Secondary data	Strength
1. Context & timeline (PNG)	• ASF confirmed and emergency response activated in 2020; response evolves: emergency → containment/zoning → recovery/long-term management • Highlands pig systems create high transmission risk; pigs central to livelihoods and cultural exchange • Control approach emphasised movement controls, checkpoints, tracing/surveillance, and risk communications	NAQIA (2020); PHAMA Plus (2021c); PHAMA Plus (2021 case study); PHAMA Plus (2024b); PHAMA Plus (2024 PNG-contains-spread PDF)	United Nations in PNG (2020); WOAH RR-Asia (2022); FAO (2025); NBC PNG (2025)	**Medium–Strong**
2. Threat of ASF (global)	• High-consequence disease: very high mortality in naïve pig populations; no simple 'quick fix' • Control relies on prevention + early detection + movement controls + surveillance + biosecurity; eradication is difficult once endemic • Reinforces why community practice and value chain controls matter	N/A	WOAH (n.d.); FAO (2020); Piesse (2021)	**Strong**
3. National interest (Australia / NZ)	• 'Offshore measures' logic: reducing regional ASF pressure lowers incursion risk to Australia/New Zealand • Economic consequences: outbreak costs and trade disruption are large; prevention is cheaper than response • Neighbouring-country capacity building provides early warning and reduced regional spread	N/A	ABARES (2019); ABS (2024); DAFF (2025a; 2025b); MPI (2024); Stats NZ (2023)	**Strong**
4. Program rationale & theory of change	• PHAMA Plus pivoted from preparedness to surge emergency support, then to containment support and system strengthening • Focus areas: technical surge, logistics, comms/behaviour change, and capability building • Strategy aligns with prevention–containment–recovery pathway and NAQIA-led response	PHAMA Plus (2020b); PHAMA Plus (2020a); PHAMA Plus (2021c); PHAMA Plus (2023a); PHAMA Plus (2023c); Kapo (n.d.)	WOAH RR-Asia (2022); United Nations in PNG (2020)	**Medium–Strong**
5. Partnership model	• Government-led response (NAQIA in the driver's seat); PHAMA enabling/catalytic role • Clear command-and-control arrangements (CVO/Task Force; provincial control centres) • Effective coordination with partners (FAO; DAFF/ACDP; SPC/PHOVAPS; MPI) where roles add speed, technical quality, and reach	PHAMA Plus (2021c); Kapo (n.d.); PHAMA Plus (2024b); PHAMA Plus (2022 SPC agreement); CSIRO & SPC (2022)	DAFF (2025b); SPC (2020); WOAH RR-Asia (2022)	**Medium**

Performance story section	Key messages in brief	Primary data	Secondary data	Strength
6. Implementation: what PHAMA Plus did	• 'Virtual command' and rapid technical guidance supported field decisions during emergency phase • Logistics and mobility support enabled rapid deployments, PPE and consumables • Large-scale risk communications ('Stopim ASF') + community outreach • Training and systems upgrades to sustain response beyond 2021	PHAMA Plus (2021 case study); PHAMA Plus (2021c); PHAMA Plus (2023a); PHAMA Plus (2023b); PHAMA Plus comms plan (2023); PHAMA Plus (2024 wrap-up comms)	ACIAR (2020); WOAH RR-Asia (2022)	**Medium–Strong**
7. Behaviour change pathway	• Not just awareness: knowledge → norms → practice (biosecurity behaviours, reporting, movement compliance) • Misinformation (including *sanguma*) required targeted messaging with trusted messengers • Behaviour change contributed to reduced spread risk and supported containment lines	PHAMA Plus (2021c); PHAMA Plus (2021d); PHAMA Plus (2021e); PHAMA Plus (2024b); PHAMA Plus comms plan (2023)	WOAH (n.d.); FAO (2020)	**Medium**
8. Effectiveness: containment (risk reduction)	• Outputs (checkpoints, movement controls, surveillance, comms) linked to outcomes (reduced spread risk, improved compliance, better reporting) • Frame as contribution to containment (not 'solving ASF') • Triangulate with official status updates over time	PHAMA Plus (2021c); PHAMA Plus (2021 case study); PHAMA Plus (2024 PNG-contains-spread PDF)	FAO (2025); WOAH RR-Asia (2022); NBC PNG (2025)	**Medium**
9. Socio-economic benefits & trade-offs	• Losses avoided very large relative to response costs (VfM narrative) • Household-level impacts where pigs lost and where movement controls reduced sales • Unintended benefits: checkpoint market hubs created income and reduced travel costs	Young (2020); PHAMA Plus (2021c); PHAMA Plus (2021d); PHAMA Plus (2024a); PHAMA Plus (2021 case study)	United Nations in PNG (2020); FAO (2020)	**Medium–Strong**
10. GEDSI / inclusion	• Women are key pig carers and may be disproportionately impacted by ASF shocks • Managing misinformation reduced risk of social tension and gendered harm • Women's economic participation evident in checkpoint market outcomes; women leaders emerge in biosecurity workforce (Tania)	PHAMA Plus (2021c); PHAMA Plus (2024a); PHAMA Plus (2024b); PHAMA Plus (2020 Push for Equality)	Australia Awards PNG (2018; 2023); Centre for Health Security (2021); Indo-Pacific Health Security (DFAT) (n.d.)	**Medium**
11. Sustainability & systems change	• NAQIA's emergency information management strengthened through real-world investigation and data capture; move toward electronic/web-based systems • Stock inspection and workforce strengthening improves ongoing surveillance, compliance, and outbreak readiness • Procurement/finance processes tested under ASF and used to inform rapid-response institutional reforms • Lab/testing and response planning upgrades improve sovereign capability for future incursions	PHAMA Plus (2021 case study); PHAMA Plus (2023b); PHAMA Plus (2023a); Kapo (n.d.); PHAMA Plus (2024b)	ACIAR (2020); WOAH RR-Asia (2022); DAFF (2025b)	**Medium**

Performance story section	Key messages in brief	Primary data	Secondary data	Strength
12. Regional spillover (SPC, Fiji, Samoa, Solomons)	• PNG lessons translated into regional prevention/preparedness (protocols, comms materials, training, rapid tests) • SPC partnership strengthened coordination (PHOVAPS) and diagnostics readiness • Countries updated action plans/strategies and tightened border monitoring	PHAMA Plus (2022 SPC agreement); PHAMA Plus (2021 Solomons report); PHAMA Plus (2023a)	SPC (2020); FAO (2020); FAO (2025)	**Medium–Strong**
13. Lessons learnt & adaptation	• VfM and losses avoided support continued investment in prevention and readiness • Behaviour change remains a 'twin-track' priority (knowledge + practice) • Market systems lens (actors along value chain) improves risk management • Institutionalising rapid response (data, labs, procurement, workforce) is the sustainability dividend	PHAMA Plus (2021c); PHAMA Plus (2021 case study); PHAMA Plus (2023c); PHAMA Plus (2024a)	WOAH (n.d.); FAO (2020); ABARES (2019)	**Medium**