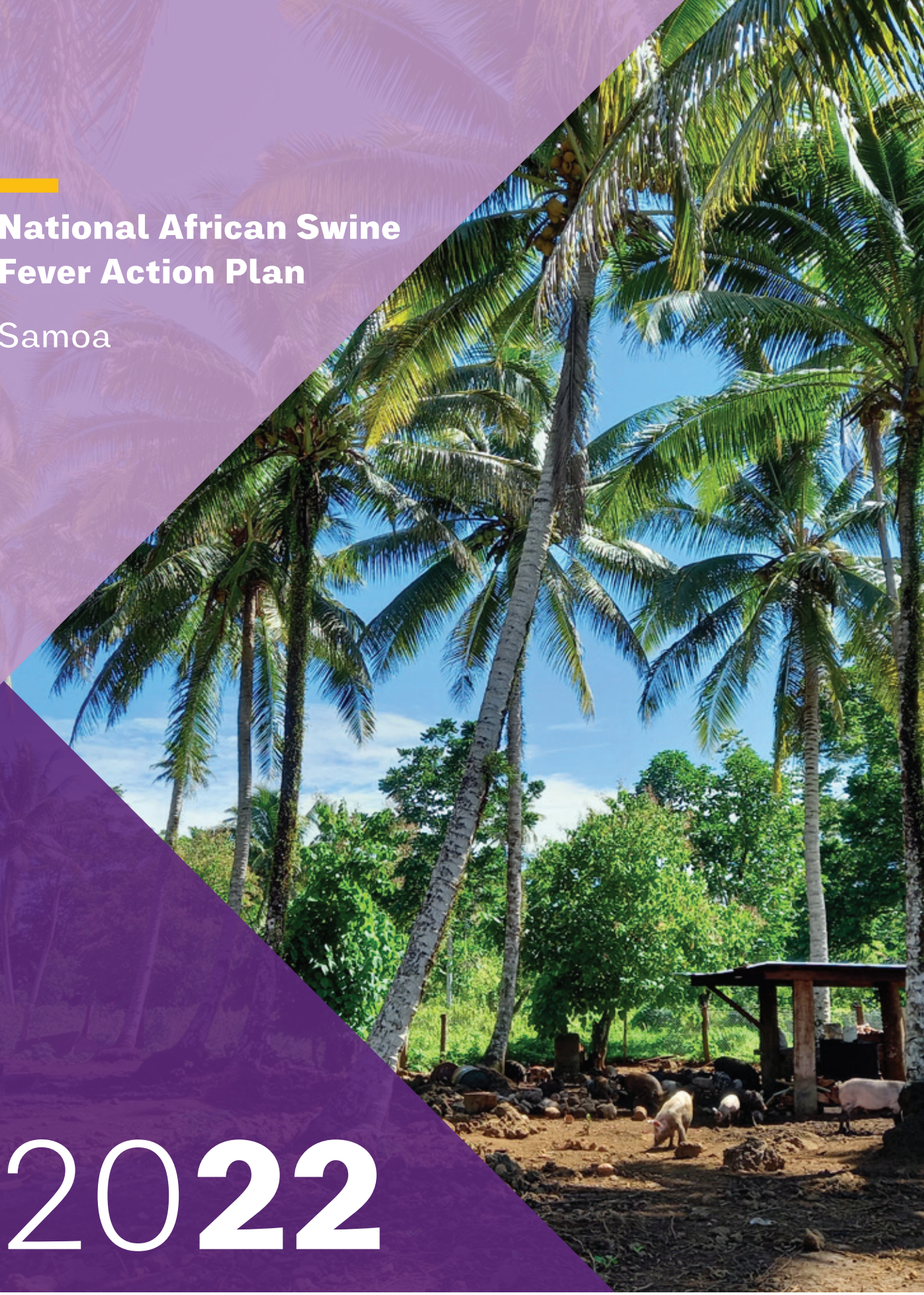
# National African Swine Fever Action Plan

Samoa



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MINISTRY OF AGRICULTURE AND FISHERIES
SAMOA

Pacific Horticultural & Agricultural Market Access Plus Program

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This document may be updated from time-to-time by the Samoan Government Ministry of Agriculture and Fisheries (MAF), in consultation with other stakeholders, to reflect the most recent or up-to-date policies and procedures.

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# Contents

# Acknowledgments

The Ministry of Agriculture and Fisheries (MAF) and the Samoa Quarantine Service (SQS) in Samoa have worked with PHAMA Plus to develop the National African Swine Fever Action Plan 2021 (the Plan) by drawing on input and feedback from a diverse group of experts and stakeholders gained through a national workshop in 2020 and a number of advisory sessions. This input has assisted the identification of the core biosecurity activities to prevent, detect and prepare for African swine fever, and to validate the actions proposed in this Plan. The contribution of these people and organisations is acknowledged.

# Foreword

Forward by the Minister of Agriculture and Fisheries, Samoa, Hon La'aulialemalietoa Leuatea Polataivao Fosi Schmidt.

The Pacific Horticultural and Agricultural Market Access (PHAMA) Plus Program has worked with the Government of Samoa, through the Ministry of Agriculture and Fisheries, to prepare the nation for a potential incursion of African Swine Fever (ASF).

There is currently a major global pandemic of ASF. The outbreak is causing mass mortality of pigs, from deaths and culling due to disease and reduced production. It is estimated that there was a reduction in the global pork production of 10 per cent in 2020. The disease is likely to reduce global dietary protein availability.

Currently, there are many countries that are free of ASF, but these countries are under threat. For example, ASF is now in the Pacific with an outbreak in Papua New Guinea. This threat arises from the globalisation of economies and the stability of the ASF virus. With ongoing movement of people and goods globally, there is a risk of transmission of ASF into Samoa.

National border inspection authorities predominantly use risk-based inspection techniques to reduce the chance that ASF will be introduced. There is, therefore, a chance that ASF will spread to Samoa and affect pork production and trade. If ASF became widely established in Samoa before detection, it may be a very difficult disease to eradicate. This would be particularly damaging at the moment with the COVID-19 pandemic and the limited resources available to authorities to deal with the introduction of such a potentially devastating disease.

The African Swine Fever National Action Plan for Samoa brings together all of the most important actions that our country needs to pursue to have a fully integrated approach to ASF. It also explains the context around these actions, as well as recognises what is already in place or underway, and focuses upon the gaps when setting actions.

In Samoa, the National Action Plan will guide the implementation of nationally agreed risk-based approaches to ASF. It describes the actions and activities that need to be undertaken to enhance national capacity to prevent the introduction of ASF, detect it early and prepare for a response, should it be detected. This approach incorporates the priorities developed to date and allows for revision of these priorities as conditions change.

The work of PHAMA Plus and its consultant advisors, Impact Consulting Group, in supporting the Government of Samoa and the Ministry of Agriculture and Fisheries, is greatly appreciated.

# Executive summary

African swine fever (ASF) is one of the most significant animal disease threats worldwide. It is fortunate, in mid 2021, it is not present in Samoa. The vision is that Samoa remains free of ASF and is prepared to respond should the need arise. ASF has been identified as one of the Asia-Pacific's top animal health priorities in recognition of the potential to severely impact on commercial and domestic pork production and the local economic, cultural and social environments.

Managing an ASF disease outbreak is economically costly and disrupts community activities across urban, regional and rural areas. An economic modelling study commissioned by PHAMA Plus in 2019 stated that:

> The Samoa Agricultural Survey of 2015 reported a pig population of 168,600, an 11% increase over the previous survey in 2009, with about half of the pigs being raised on Savai'i Island. It was estimated that less than 25% of pig offtake is sold for cash, the remainder being consumed, gifted or exchanged. Almost all pigs are raised under smallholder/ village conditions with very limited use of prepared rations, the majority of food coming from local root crops, coconuts, household food waste and free-range scavenging. Productivity levels are low with weaning rates of only 4-5 piglets per sow per year, mortalities of up to 50% and pigs reaching only about 65 kg lwt [i.e. live weight] nine months after weaning. There are a few small commercial piggeries with 5-10 sows each feeding prepared rations and selling pigs at around 90 kg lwt. Feed costs are around USD 0.70-0.80/kg, but pig/pork prices are also high. Village weaner pigs of 20-30 kg sell for around USD 3.0-4.00/kg lwt.[1]

The potential direct costs of a single localised ASF outbreak to the Samoan economy is estimated at USD 2.5million for smallholders and USD 0.07 million for commercial producers. If localised outbreaks become sporadic the cost would escalate to USD 6.1 million and USD 0.2 million respectively.

In the event of a major outbreak that was sporadic, the costs are estimated to be up to USD 30.4 million for smallholders, rising to a maximum of USD 60.8 million for smallholders where an outbreak classified as 'worst' was sporadic. Costs for commercial producers for similar scenarios are estimated to range from USD 0.95 million to USD 1.9 million.

ASF can infect all pigs, including wild and feral pigs and in other nations it has spread vast distances via human movement of infected materials.

The disease may result in high or low case mortality rates depending upon the virus strain. However, the strain currently circulating in other countries in Asia and in Papua New Guinea and Timor-Leste has a very high mortality rate. There is no known practical treatment once a pig has been infected. Whilst ASF does not infect humans, humans can be a major factor in the transmission of ASF.

The National African Swine Fever Action Plan (the Plan) provides a national integrated approach to enhance Samoa's capacity to prevent the introduction of ASF, detect it early and prepare for, respond to and recover from ASF should it be detected, and sets out the actions to achieve this outcome.

1 The quote and USD costs are from Social and Economic Impact of African Swine Fever (ASF) in the Pacific Island Countries, DT Global Australia 2020

# 1. Introduction

The National African Swine Fever Action Plan (the Plan) is intended to guide the implementation of nationally agreed actions for a strategic and risk-based approach to enhance Samoa's ability to prevent the introduction of ASF, detect it early if it is introduced and to prepare for a response, should ASF be detected in Samoa. **The vision is that Samoa remains free of ASF but is prepared to respond should the need arise.**

The Plan recognises that there are unknowns regarding the potential impact of ASF on the Samoan economic and social environment and pig production activities. Knowledge gaps relating to the means by which ASF might be transmitted to domestic and commercial pigs should an incursion occur, including feral and wild pigs, should be addressed to help prepare for an outbreak. The Plan identifies areas for further work to better understand the disease and to build national expertise and capability.

Determining ASF to be one of Samoa's top National Priority animal diseases is reflective of the significant potential impact on Samoa's economic, cultural and physical environment. A National Priority animal disease, such as ASF, should be of significant concern to Samoa and the focus of government investment and action.

The success of this Plan is dependent on a high level of cooperation and collaboration at all levels of pig production, ranging across villages, semi commercial and fully commercial producers, all levels of government, non-government organisations and individuals, experts, and research agencies. The Plan is supported by an implementation schedule which will be used to:

- record the progress of actions;
- set out roles, responsibilities and funding; and
- to communicate with stakeholders on progress.

The Ministry of Agriculture and Fisheries (MAF), Animal Production and Health Division (APHD) and the Samoa Quarantine Service (SQS)), as the relevant national agencies for animal biosecurity in Samoa, have endorsed the Plan and will oversee its implementation on behalf of the Samoan Government. Relevant industry and civil society bodies will be engaged on implementation of the Plan through effective co-ordination, relevant research and development corporations, Pacific Partnership etc and other forums[2].

The Plan will be formally reviewed at agreed intervals, say every three years, but the actions set out in the Plan will evolve as knowledge is gained through research and overseas experience.

2 A National ASF Preparedness Coordinator may be designated to co-ordinate preparedness for African Swine Fever in Samoa, subject to the approval of the Government of Samoa and the availability of funding from government and/or non-government sources.

# 2. African Swine Fever

African Swine Fever (ASF) is a viral disease of pigs causing sickness, death and severe production losses. ASF is contagious, with a variety of clinical signs, including fever, redness of the skin, depression, lethargy, incoordination (ie, the inability to use different parts of the body together smoothly and efficiently), diarrhoea and pneumonia. It may result in high or low mortality rates depending on the virus strain. However, the strain currently circulating in other countries in the region has a very high mortality rate. ASF is clinically indistinguishable from another exotic disease of pigs - classical swine fever (CSF). **The disease does not affect people.**

ASF is not present in Samoa in mid 2021 but the disease is currently spreading around the world particularly Europe and Asia. ASF is now present in Timor Leste, Indonesia, the Philippines and Papua New Guinea. Globally, the disease has resulted in the deaths of over 200 million pigs, either due to infection with the virus or culling of pigs in attempts to control its spread. The majority of these deaths have been in Asian countries. The risk to Samoa is high. The ASF virus has been regularly detected in pig meat products confiscated during international arrival quarantine inspections at overseas airports. An outbreak of ASF in Samoa would severely impact pork production, economic wellbeing and cultural practices.

There is no effective treatment for infected animals. Although attempts have been made to develop a suitable vaccine, there is currently no commercially available vaccine against ASF.

Transmission of ASF virus is by direct contact with infected pigs or ingestion of products from infected pigs. Infected bedding, feed, equipment, clothes and footwear can also spread the virus. Movement of infected pigs or infected products such as pig meat is the most important means of spread of the disease into new areas. The feeding of contaminated meat to pigs in the form of food scraps and kitchen waste from homes, restaurants, construction camps, etc is also a proven and common way for the disease to be spread. Cooked or canned hams are safe, provided that they have been heated throughout to 70°C for 30 minutes or more. The ASF virus does not survive in commercially manufactured canned pork products.

The ASF virus can also be transmitted by certain species of ticks and by biting insects (e.g. mosquitoes), but whether this would be an important means of spread in Samoa is unknown. The ASF virus survives for long periods under most environmental conditions (three months or longer) and is resistant to a number of commercially available disinfectants that readily inactivate other viruses.

If ASF is suspected, its presence must be confirmed through laboratory testing of samples from infected pigs. However, preliminary results may be obtained from the use of rapid field antigen detection test kits. This work may be supported by the Scientific Research Organisation of Samoa (SROS).

A disease eradication program in Samoa would present some unique challenges because of the widespread keeping of pigs in village situations. The experience in Timor Leste and PNG is that most if not all pigs in a localised area die from the disease. However, if individual pigs are confined in pens, tethered or otherwise not free to roam, then transmission is significantly slowed or stopped.

**Strict movement controls will be vital in preventing the spread of disease throughout Samoa.**

# 3. National ASF Action Plan

## 3.1. Scope of the Plan

This Plan describes the elements of a national approach across the biosecurity continuum—prevention, detection, preparedness, response and recovery—and sets out actions and priorities to improve the management of risks associated with ASF that are relevant to all stages of the biosecurity continuum.

## 3.2. Structure of the Plan

This Plan describes the national context for biosecurity risk management. It is structured into four action areas aligned with the biosecurity continuum—prevention and mitigation, detection, response and recovery—and one area of cross-cutting actions. The cross-cutting area has actions that fit into two or more of the key biosecurity continuum areas. The latter sections describe how the Plan will be implemented, and how progress will be monitored and evaluated.

# 4. National context

Samoa's biosecurity system operates under legislation which is administered and managed by the government's agricultural and border security agencies. They are the Ministry of Agriculture and Fisheries (MAF) and its relevant divisions, the Animal Production and Health Division (APHD) and the Samoa Quarantine Service (SQS). These agencies also contribute to early detection, national response arrangements, and committees, in collaboration and consultation with industry, civil society and other stakeholders.

## 4.1 Legislation

Legislation relevant to the management of African Swine Fever is listed in Table 1. Legislative provisions are used to prevent the entry, establishment and spread of African Swine Fever in Samoa.

**Table 1: Legislation relevant to African Swine Fever**

| Administering Authority | Primary Legislation |
|---|---|
| **Ministry of Agriculture and Fisheries** | Quarantine (Biosecurity) Act 2005 |
| **Samoa Quarantine Service** | As above |
| **Scientific Research Organisation of Samoa** | Scientific Research Organisation of Samoa Act 2008 |

## 4.2 National arrangements

Established relationships and national arrangements are in place between Government agencies, pork production producers, civil society and other community stakeholders in Samoa, to coordinate and implement national action on biosecurity issues, including African Swine Fever.

### Biosecurity planning and preparedness

PHAMA Plus works with MAF and its divisions (APHD and SQS) in Samoa to develop strategies and plans that improve biosecurity standards, as well as providing assistance with implementation of agreed risk mitigation measures, such as biosecurity plans, biosecurity manuals for producers and awareness raising extension services.

Through this process, African Swine Fever (ASF) has been identified as a high priority animal health threat.

### Emergency response arrangements

For ASF, the relevant national agreement governing an emergency animal disease response is the Animal Biosecurity Emergency Response Plan and the ASF Response Strategy for Samoa, with links to existing legislation. At the time of writing, both are under final development and endorsement by the Samoan Government will be sought.

### National committees

The Samoa Government has established advisory bodies to provide a formal mechanism for developing and coordinating key animal biosecurity policy and procedures that are consistent across the country and interface with other PICs, identifying activities to enhance national biosecurity preparedness and response capability. National committees would be responsible for a national strategic approach to emerging and ongoing biosecurity policy issues. They can be supported by a number of sectoral committees which provide policy, technical and scientific advice on matters affecting their sectors for all pests and animal disease.

### The pulenuu village system

The Ministry of Women, Community and Social Development (MWCSD) is involved with the administration of the *pulenuu* village system. Most village households raise pigs and as a group, households are the major pig/pork producers in the country. The village *fono* (council of chiefs) should be included and emphasised in all activities given their village regulatory role and control, essential when instigating changes to the free range piggery system common in many villages. The *fono* is also a convenient and effective means of promoting awareness to village and rural areas.

## 4.3 The biosecurity continuum

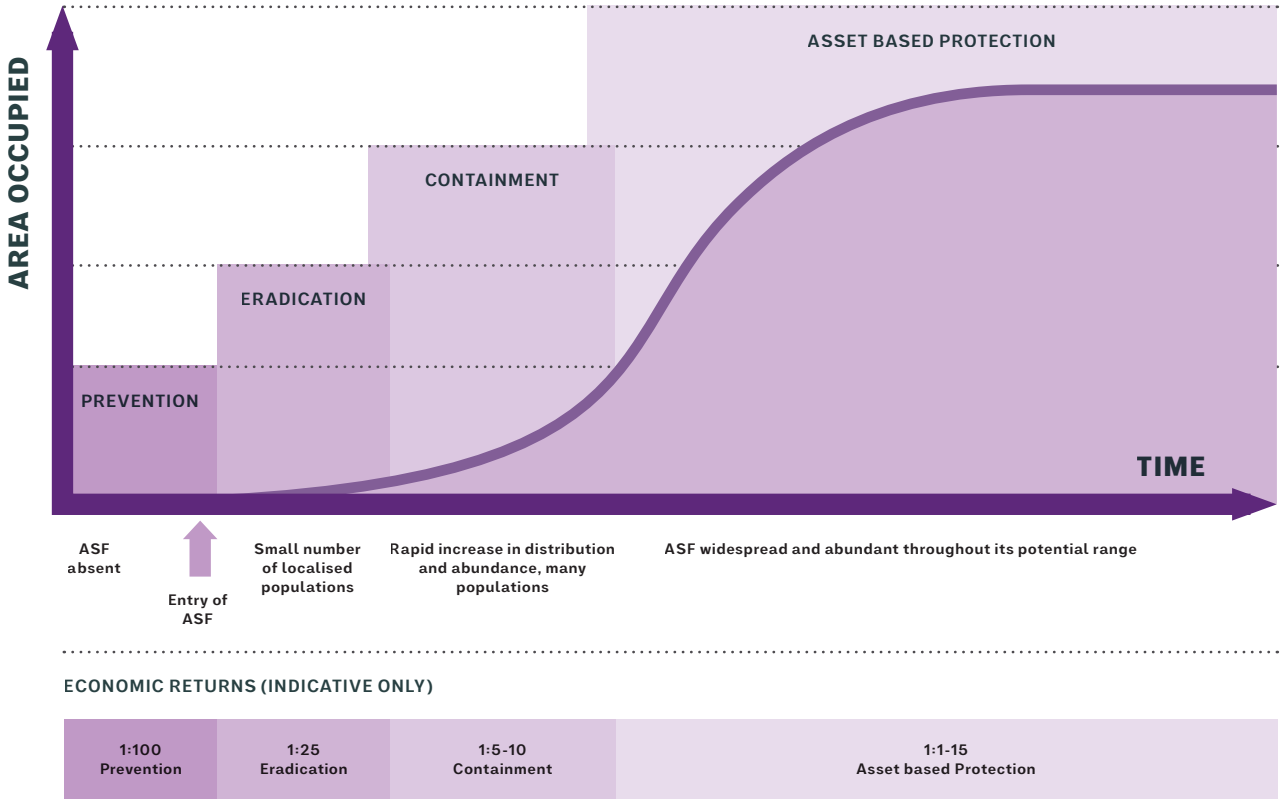
The generalised biosecurity **Invasion Curve** (Figure 1) outlines the changing role of governments and stakeholders as actions to respond to a disease change from prevention, eradication, or containment to animal protection (management). 'Entry' or detection of a new disease incursion lies between prevention and eradication. The 'return on investment' of public funds generally reduces with progression along the **Invasion Curve**, but it is still beneficial at the asset-based protection end of the curve for animals, such as pigs, that are of national importance.

As the area impacted by a disease increases (moving from left to right on the curve), the chance of successful eradication is reduced and containment may become a preferred option. Ultimately and without intervention, animal protection, or management, will be the only option with the cost primarily borne by the owner of the animals, ie pigs.

Governments are considered to have a greater responsibility in the earlier stages of the curve (prevention and eradication), whereas those best placed to protect pigs from ASF are generally the owners of those pigs. The environmental, primary production and social costs of inaction are high, especially at the prevention and eradication end of the curve. It is possible to determine the economic cost in terms of adverse effects on pig production. However, there are few agreed models to measure the ecological cost of ASF in economic terms.

**Figure 1: Biosecurity Invasion Curve**

**Generalised invasion curve showing actions appropriate to each stage**




*Source: Adapted from Agriculture Victoria, Australia, 2009.*

The action areas identified in this Plan align with the early stages of the generalised **Invasion Curve**, noting that as Samoa is currently free of ASF (as at mid 2021), this Plan does not include actions relating to containment and asset-based protection. The take home message from Figure 1 is that the best investment of resources is in preventing an outbreak in the first instance or if an outbreak occurs, detect it early to provide the best chance of speedy eradication.

# 5. Action Areas

Without exception the most cost-effective means of managing a disease like ASF is to exclude it from Samoa. Within reason, even if it is ultimately unsuccessful, efforts to exclude such a disease will represent good value if the time made available by delaying an incursion is used to develop and enhance the plans and resources available to respond to the disease when it does occur.

The Action Areas and activities addressed below contain all of the elements of a program that would give Samoa the best chance of excluding ASF from impacting upon its commercially, socially and culturally important pig-raising activities.

This section describes the necessary elements of a national approach across the biosecurity continuum and sets out actions and priorities to improve the management of risks associated with ASF. It also identifies several cross-cutting actions that are relevant to two or more of the key biosecurity continuum areas.

The Action Areas are:

1. Prevention and Mitigation
2. Surveillance and Detection
3. Response
4. Recovery
5. Crosscutting Actions

## Action Area 1: Prevention and Mitigation

### Action Area 1a: Prevention

**Prevention** is aimed at minimising the likelihood of entry of ASF. The actions identified in this key area aim to achieve a better understanding of the diversity and relationship between, potential pathways into Samoa, the means to minimise the risk of this entry and establishment and spread.

#### Action 1a.1: Conduct an ASF risk assessment to review and maintain appropriate regulation at the border to minimise the risk of introduction into Samoa

**A risk assessment is an important tool to assess the changing global distribution and hosts of African Swine Fever and to identify the most effective risk management measures available to prevent entry to Samoa.**

The Samoa Quarantine Service (SQS) maintains biosecurity controls at the Samoan border to prevent the introduction of animal diseases into Samoa. Each year, SQS clears and inspects large volumes of imported food goods, including pork products and pig feed. In response to an increasing threat, SQS implemented emergency measures for ASF in 2019-20 to manage the import of an expanded range of goods and, prior to the COVID-19 outbreak, travellers arriving from outside of the country. Appropriately, Samoa's import policies and regulations prohibit the importation of pork and pork products from any country except Australia and New Zealand.

The Ministry of Agriculture and Fisheries (MAF) provides knowledge and other livestock related services to the pig industry, including commercial producers, processors and distributors, importers and exporters, smallholder pig farmers and communities necessary for the adoption of best practices in the raising of pigs for domestic consumption and export.

The highest risk entry pathway for ASF is by people entering the country from an ASF-infected region carrying undetected pork products that are subsequently fed to pigs in the form of food

scraps. Mislabelled or mis-represented commercial imports of pork products also pose a significant risk.

The Food and Agriculture Organisation (FAO) currently considers that several countries in Asia and Europe and much of Africa are high risk countries. FAO is active in the Pacific in supporting nations to deal with the potential impact of ASF on pig producers in commercial and non-commercial sectors, including regional and rural villages and communities.

In line with international obligations and standards set by FAO, PHAMA Plus has supported a risk assessment to underpin the emergency measures. Ongoing monitoring of the global situation and adjustment of border measures, as necessary, is to be undertaken so that regulation at the Samoan border remains appropriate.

Actions required are:

- Conduct a risk assessment to identify and assess possible incursion pathways and develop risk-management plans for all priority pathways;
- Review all relevant border risk management protocols to ensure that they are firstly, consistent with the risk priorities as identified and secondly, implemented according to agreed protocols; and
- Undertake risk reviews on a regular basis (six-monthly in the absence of an incursion) and update regulations and protocols as appropriate.

### Action 1a.2: Review and upgrade the capacity to handle and dispose of suspect materials at airports and harbours

**The equipment to receive, transport and destroy suspect materials is crucial to the successful barrier at the border to the importation of contaminated materials**

The operation of incineration equipment at or near the border at airports and ports by the Samoa Quarantine Service (SQS) ensures that seized materials and risk materials such as aircraft and ships galley waste are not placed in areas where they can either be taken by individuals for the feeding of pigs, nor are directly accessible to free ranging pigs, either domestic or feral/wild. It also pre-empts any diplomatic intervention to retain seized materials.

Actions required are:

- Review protocols, personnel and facilities for the identification collection, handling and biosecure destruction of risk materials, arising from the inward movement of people, goods and waste products, by air and by sea, including international fishing fleets and international workers, to ensure that they are fit for purpose; and
- Develop plans and protocols to address deficiencies identified, with a focus on the location, capacity and operability of incineration facilities.

### Action 1a.3: Establish arrangements with neighbouring countries to ensure early advice of regional incursion and spread of ASF

**Samoa's near neighbours are part of its animal disease defence network and by working closely together, Pacific countries can better protect the region from ASF.**

Strong relationships and opportunities for collaboration with Pacific neighbours on biosecurity will strengthen Samoa's ability to recognise established animal diseases to the Pacific region. This will improve effectiveness of response and control activities, as well as providing a level of early warning intelligence to Samoa.

Strong ties already exist through the auspices of the Pacific Community (SPC) and regional biosecurity programs, such as in Fiji, the Solomon Islands, Tonga and Vanuatu and surveillance activities in Timor-Leste and Papua New Guinea. This work should encompass a review of capability for prevention and preparedness for ASF in near neighbours and aim to increase awareness and facilitate the building of any required capability. Monitoring ASF and any vectors in neighbouring countries where Samoan agencies work with their counterpart agencies to conduct surveillance may also provide early warning intelligence to Samoa.

Actions required are:

- Review current arrangements for information-sharing with neighbouring countries, FAO and OIE in relation to the incursion and transmission of pests and diseases with a particular focus on ASF;
- Initiate, as appropriate, bilateral or multilateral negotiations to address deficiencies so identified; and
- Undertake occasional exercises to test capability of information sharing arrangements.

**Table 2: Summary table of Action Area 1a: PREVENTION**

| Action Area 1 | | Priority | Timeframe * |
|---|---|---|---|
| **Action 1a.1** | Conduct an ASF risk assessment and maintain appropriate regulation at the border to minimise the risk of introduction into Samoa. | High | Short term |
| **Action 1a.2** | Review and upgrade the capacity to handle and dispose of suspect materials at airports and seaports. | High | Short term |
| **Action 1a.3** | Establish arrangements with neighbouring countries to ensure early advice of regional incursion and spread of ASF. | Medium | Medium term |

*** Indicative timeframes: SHORT up to 3 years; MEDIUM 4 to 8 years; LONG up to 10 years**

## Action Area 1b: Mitigation

Application of appropriate mitigation measures will reduce the impact and spread of ASF should it be introduced to Samoa.

One of the best applications of the time and resources made available by the implementation of an effective strategy to prevent the incursion of ASF is to plan and implement actions to mitigate the establishment and spread of the disease and the impacts of an incursion, should it occur.

Key elements of a Mitigation Strategy are:

- activities that prevent establishment of ASF should infected meat enters Samoa;
- activities that reduce or slow the spread of the disease from the point of incursion to other areas within Samoa; and
- activities that minimise the number of pigs that become infected when the disease enters an area.

The Action Areas and Activities outlined below if implemented on a wide scale would have the beneficial effects identified above.

### Action 1b.1: Identify, develop and promote best practice biosecurity standards and tools for the management and handling of pigs appropriate to the scale of pig raising being practiced

Whilst there are common elements to the raising of pigs, in Samoa the strong involvement of villages and communities in pig production requires a flexibility in the form of practice, taking account of the numbers of pigs raised and the commercial and cultural contexts that influence pig producer practice.

Actions required are:

- Promote adoption of improved general pig biosecurity and husbandry standards, including:
  - Penning of pigs,
  - Disinfection/cleansing of pens, equipment and clothing,
  - Control of contact that people have with pigs,
  - Regular observation of pigs for signs of ill health or disease,
  - Management of the introduction of new pigs to a herd, and
  - Best practice standards for the slaughter of pigs and the disposal of pig waste and carcasses;
- Ensure that producers have access to convenient tools and processes for the recording and reporting of relevant information on pig health and movements;
- Undertake an inspection of all large-scale commercial piggeries to ensure compliance with biosecurity standards;
- Develop and implement plans to contact semi-commercial producers to assess suitability of containment facilities; promote upgrades as needed and promote awareness of ASF and appropriate biosecurity practices for pig management;
- Develop designs for small scale pigpens that meet biosecurity guidelines and comply with water quality waste-management standards;
- Establish a multi-agency taskforce to promote wider adoption of appropriate pig-penning facilities and waste management practices at the village level, for biosecurity, environmental, and water quality benefits and the procurement of required materials to achieve these benefits; and
- In non-urban communities, identify the case and options for installing barrier fences consistent with biosecurity guidelines to exclude feral pigs from nose-to-nose contact with domestic animals

### Action 1b.2: Control and minimise feeding of untreated swill to pigs

The feeding of food scraps containing meat as swill to pigs in Samoa has been identified as the most likely way that an ASF outbreak will occur, particularly where untreated pork is included in the feed, sourced from restaurants, hotels and tourist facilities, aircraft and ship arrivals and domestic consumption of infected pork.

Actions required are:

- Raise awareness across Samoa of the absolute importance of not feeding meat scraps to pigs;
- Develop, test and promote guidelines for the treatment of food wastes to eliminate the risk of transmission of ASF;
- Review and amend as necessary, the relevant regulations and protocols to prohibit or control the feeding of untreated swill to pigs; and
- Engage with pig-producers, hotel and resort managers/restauranteurs to prevent or minimise the supply and feeding of untreated swill to pigs.

**Table 3: Summary table of Action Area 1b: MITIGATION**

| Action Area 1 | | Priority | Timeframe * |
|---|---|---|---|
| **Action 1b.1** | Identify, develop and promote best practice biosecurity standards and tools for the management and handling of pigs appropriate to the scale of pig raising being practiced | High | Short term |
| **Action 1b.2** | Control and minimise feeding of untreated swill to pigs. | High | Short term |

*** Indicative timeframes: SHORT up to 3 years; MEDIUM 4 to 8 years; LONG up to 10 years**

# Action Area 2: Surveillance and Detection

Surveillance and detection are focused on ensuring that the right tools and strategies are in place to find and identify ASF as soon as possible after it enters the country. The actions identified include appropriate strategies for surveillance and diagnostic capacity.

Surveillance is essential to provide on-going confidence that Samoa is free from the disease, and importantly, to ensure early detection of the disease should it be introduced. Early detection of ASF allows for an effective response, to contain an outbreak to as small a geographical area as possible, to provide the best chance of eradication and to minimise the impacts of the disease on pig industries and communities. Early detection, coupled with a practiced response plan, will allow Samoa's veterinary authorities to manage the threat before it becomes uncontrollable.

It is also important that available testing capacity is used most effectively and efficiently on sick pigs. Active survey testing of healthy pigs, for example at piggeries or abattoirs, is NOT a cost-effective surveillance strategy for early detection of ASF and is impractical in traditional pig keeping situations. It also unnecessarily consumes precious and often limited diagnostic resources such as test kits and reagents.

A surveillance program in Samoa will involve active collaboration between the Animal Production and Health Division (APHD) of MAF and the Scientific Research Organisation of Samoa (SROS). SROS will play a strong role in diagnostic testing for ASF in Samoa.

## Action 2.1: Develop a national Surveillance Strategy and risk-based Surveillance Plan for ASF

**A Samoan ASF Surveillance Plan specifies the activities that are appropriate for local pig industry operations, across the country and in all pig production environments.**

The design and implementation of national surveillance should take into account resourcing requirements and synergies with existing and planned surveillance activities. Surveillance effort should be prioritised based on risk and pathways.

It is essential that surveillance programs are collaboratively developed and actively conducted by all potentially affected producers and governments. Surveillance programs need to incorporate activities conducted by local industry and villages and the general community. This will provide opportunity for pig industry bodies and other stakeholders to work together to generate efficiencies, enhance strategic outcomes, and develop approaches that are relevant across sectors and regions.

Surveillance should utilise the most up to date information available on the location of all pig producers, the actual numbers of domestic pigs, the style of production (penned, free range), processing and live and processed transport, as well as the location of concentrations of feral pigs.

Actions required are:

- Develop an overarching ASF Surveillance Strategy which will provide the blueprint for ASF surveillance in Samoa;
- Obtain endorsement of the Strategy from all relevant agencies (particularly MAF and SQS);
- Undertake a surveillance assessment that covers the risks of entry and establishment of ASF in each/all types of pig-husbandry (commercial, small scale and village/ community) including feral pigs, to establish priorities for surveillance activities;
- Based on the surveillance assessment, develop a National Surveillance Plan that addresses the priorities identified in the risk assessment;
- Subject to the outcomes of the surveillance assessment, identify the resources (human, facilities and materials) required to satisfy the objectives of the plan;
- Undertake mapping of all pig producers, their locations and number of pigs under control, commencing with commercial producers and extending to semi commercial and traditional producers;

- Ensure that the plan focusses on enhancing traditional passive surveillance systems, ie the surveillance system should focus on the reporting and investigation of sick and dying pigs, but include strategies to improve the chances that affected pigs will be reported and investigated;
- Establish a surveillance information management system for recording and reporting of surveillance activities and findings;
- Build awareness and encouragement for pig owners and community members to report unusual occurrences of death and disease in pigs as the target animals for investigation and testing; and
- Undertake monitoring of posts on social media platforms to look for 'chatter' on sick or dying pigs in village and community settings.

## Action 2.2: Establish diagnostic testing capacity and capability to meet demands whilst Samoa is free from ASF, and surge capacity if ASF occurs.

**Establishing and maintaining capacity and capability to test large volumes of samples will place Samoa in a better position to conduct surveillance and to respond should ASF be detected in Samoa.**

Current diagnostic capabilities to test for ASF should be reviewed as part of this work. Work will also be required to ensure that diagnostic skills that support either local testing or ready access to overseas testing capability are available for Samoa.

To ensure that laboratories in the Pacific and, if necessary, Australia and New Zealand are prepared to handle large numbers of samples, work is required to develop and validate high-throughput capacity and capability and to ensure the availability of experienced diagnosticians.

A diagnostics project has been initiated through PHAMA Plus and led by the Australian Centre for Disease Preparedness to increase Samoa's and the Pacific Region's capacity and preparedness for ASF, which includes a component to increase available diagnostic capability, either locally or off-shore.

Actions required are:

- Assess overall laboratory capability and capacity required to support enhanced general surveillance (as per the Surveillance Strategy and Plan);
- Enhance diagnostic capability at the Scientific Research Organisation of Samoa (SROS);
- Where the necessary capability and capacity is absent, options for establishing ready access to laboratory services in the region should be pursued (cross over with Action 2.4); and
- Determine optimum approach to meeting surge capacity in an outbreak (cross-over with Action 2.4).

## Action 2.3: Develop field-based diagnostic tools and procedures.

**Reliable and affordable diagnostic tools that can be deployed in the field will assist rapid and accurate identification of ASF.**

Clear guidelines are needed for testing pigs in the field and for triaging pigs for diagnostics. There is strong knowledge of the factors affecting the reliability of diagnostic tests used to detect ASF. Ensuring that there are validated diagnostic tools and procedures available for use in the field will provide a more cost-effective way to test for ASF, thereby increasing the ability to cover greater areas and numbers of pigs and providing a more active, real-time early warning system.

Actions required are:

- Evaluate the range of field-based diagnostic tools available against the particular circumstances of the nature of pig-raising in

Samoa;
- Evaluate the resources available to undertake and manage field surveillance and diagnosis across the range of pig-raising operations in Samoa;
- Secure supplies of the preferred diagnostic tools, personal protective equipment and other consumables, to sustain an appropriate level of surveillance under presumed 'ASF-free' circumstances and establish arrangements to ensure rapid access to additional supplies in the event of the detection of ASF in Samoa; and
- Develop and test procedures for the deployment and effective and efficient use of the field-based diagnostic tools selected and implement training of MAF and SQS field staff.

## Action 2.4: Establish arrangements for secure access to laboratory based diagnostic services, where these are not available within Samoa.

**Samoa maintains laboratory capacity through SROS, which has a potential role in the quality control of diagnostic services. Samoa also has access to established laboratory capacity in Australia and New Zealand that can be utilised in the event of an ASF outbreak.**

Actions required are:

- Evaluate the range of laboratory-based diagnostic tools available against the resources available in Samoa;
- Assess which of the preferred diagnostic tests should be performed in laboratories, primarily at SROS in Samoa or elsewhere in the Pacific (e.g., Fiji, New Caledonia) and undertake a review of the facilities proposed to be used to ensure that they have capability and capacity to meet the requirements outlined in the Surveillance Plan; and
- For the tests to be performed in laboratories outside Samoa, review current options for timely access to competent external laboratories and develop formal arrangements with them to ensure access to the types and number of tests anticipated in the surveillance and response plans, when necessary.

## Action 2.5: Develop a feral pig surveillance and testing plan for circumstances where ASF occurs in feral populations

**The ability to test feral pigs as potential vectors for ASF in surveillance programs is critical.**

Feral pigs, including wild pigs and pigs raised domestically that have been abandoned and/or escaped into the wild, may be potential vectors or reservoirs of ASF. Feral pigs could be the initially infected pigs in an outbreak (i.e. from scavenging discarded food) or could become infected as a result of an outbreak in domestic pigs. The surveillance system needs to be able to detect infection in either circumstance. The primary focus should be on observation and reporting of any unusual disease in feral pigs. During an outbreak in domestic pigs, more active methods of sampling may be employed.

Actions required are:

- Collect and collate information on feral pig populations in Samoa to understand numbers, densities, locations and movement patterns of feral pigs;
- Identify areas where feral pigs are most likely to acquire ASF (e.g. access to refuse dumps) and which populations are likely to interact with domestic pigs and develop surveillance and testing plans for circumstances where ASF is recorded in feral or domestic pigs;
- As part of ongoing awareness programs, encourage the reporting of any unusual sickness or deaths in feral pigs'
- Identify Samoan agencies and resources to be accountable for and deployed for surveillance of feral pig populations during an outbreak and ensure that the accountability is accepted and that surveillance and testing procedures have been developed and practiced; and

- Assess the feasibility of commencing baiting programs to control feral pigs and protect commercial and traditional cropping activities.

## Action 2.6: Determine whether arachnid and insect genera known to be vectors of ASF occur in Samoa

**A number of arachnid and insect genera are known to include vectors of ASF in other places and a preliminary assessment of their possible occurrence in Samoa would assist surveillance and response planning.**

In Africa, the soft argasid tick (*Ornithodorus moubata porcinus*), plays a significant role in the transmission of ASF between wild and domesticated pigs. Bloodsucking insects such as mosquitoes and biting flies (*Stomoxys spp.*) feeding on viraemic pigs can carry high levels of virus for 2 days and have been implicated in the mechanical spread of ASF in other places.

It is not known whether these or related species occur in Samoa. Preliminary research to determine whether such potential vectors can be dismissed as a threat in Samoa would assist in planning surveillance and response in the event of an ASF outbreak in Samoa.

Actions required are:

- Work with SPC and other PIC jurisdictions to identify arachnids and insects confirmed or suspected to transmit ASF in other countries;
- If available, interrogate Samoan insect and arachnid collections and databases to determine if species close to those identified above are known to occur in Samoa; and
- If any potential arthropod vectors of ASF are recorded as occurring in Samoa, undertake a risk-assessment of their significance as potential vectors and include in surveillance and response planning consistent with the risk-assessment.

**Table 4: Summary table of Action Area 2: DETECTION**

| Action Area 2 | | Priority | Timeframe * |
|---|---|---|---|
| **Action 2.1** | Develop a national Surveillance Strategy and risk-based Surveillance Plan for ASF | High | Short term |
| **Action 2.2** | Enhance diagnostic testing capacity and capability to meet demands whilst Samoa is free of ASF, and surge capacity if ASF occurs | High | Short term |
| **Action 2.3** | Develop field-based diagnostic tools and procedures. | High | Short term |
| **Action 2.4** | Establish arrangements for secure access to laboratory based diagnostic services. | High | Short term |
| **Action 2.5** | Develop a feral pig surveillance and testing plan for circumstances where ASF may occur in feral pig populations. | Medium | Medium term |
| **Action 2.6** | Determine whether arachnid and insect genera known to be vectors of ASF occur in Samoa. | Medium-low | Short term |

*** Indicative timeframes: SHORT up to 3 years; MEDIUM 4 to 8 years; LONG up to 10 years**

# Action Area 3: Response

While the exclusion of ASF is by far the most cost-effective means of addressing the threat, it is not possible to guarantee that efforts to prevent ASF entering will always succeed. Minimising the cost and other deleterious impacts of an incursion of ASF relies upon Samoa having a well-researched, well-resourced and well-rehearsed risk based, flexible and scalable Response Plan that addresses the interests and needs of the full range of stakeholders in the production of pigs in the country. The Action Areas and Activities specified below provide a sound basis for achieving an appropriate, effective and efficient response.

## Action 3.1: Develop comprehensive national contingency plans and supporting operational procedures and test through a national simulation exercise.

**Planning potential incursion scenarios and having national processes and procedures in place before they are needed, are key to being prepared for ASF.**

Contingency planning is a pre-emptive preparedness activity that improves readiness for an animal disease incursion. Contingency plans are commonly developed by industries and governments before an incursion and aim to consolidate information on a particular animal disease, vectors, biology, and available control measures.

It is essential to develop national contingency plans to cover all potentially affected pig producing sectors as there will need to be different approaches to some aspects of disease control in the different sectors. Contingency plans should be sufficiently detailed to clarify measures for eradication— including delimiting surveillance, containment / movement controls, hygiene, vector control, eradication, and host free periods; and for long term management options—including containment and control.

Contingency plans should be developed with the technical and practical aspects of operational procedures in mind to enable a rapid response to be implemented. Potential for tailoring contingency plans to specific pig production systems, particularly at the village level would require plans and operational procedures to be developed collaboratively and tested through national simulation exercises. Regular updating and testing of plans and procedures would be required to maintain currency.

It is also vital that plans are not regarded as 'set in stone' and remain flexible and adaptable to the changing circumstances that may be experienced in an actual outbreak.

Actions required are:

- Develop an ASF Response Strategy for Samoa, ensuring consistency with existing Biosecurity Emergency Management Plans and response plans in place for other sectors (such as plant pests/diseases);
- Based on the revised response plan, develop, implement and monitor a national simulation exercise; and
- Review and revise the Animal Disease Response Plan and ASF specific Response Strategy and Procedures in the light of findings arising from the simulation exercise.

## Action 3.2: Develop tools and systems to capture, store and analyse real-time surveillance, spatial and diagnostic data to support a response in the Samoan context.

**Managing ASF disease requires 'fit for purpose' information and data management tools.**

Effective management strategies for ASF internationally are developed for entire regions and are implemented at the farm and village level. It is necessary to capture, store and analyse real-time surveillance, diagnostic, and spatial data. These systems help address the challenges of surveillance and management of ASF.

The Animal Production and Health Division (APHD) of MAF maintains a data collection and reporting system. The Disaster Advisory Committee (DAC) also plays a role in the management of data

Samoan systems need to be further identified and assessed as part of an overall preparedness capacity.

Actions required are:

- Review existing Emergency Animal Disease data capture, storage and analysis tools and systems to determine, operability, connectivity, capacity and utility against current best practice standards and requirements of ASF surveillance and response plans for Samoa;
- Upgrade tools, systems and protocols to meet requirements; and
- Subject data management systems to iterative testing and upgrading by participating in desk-top and field simulations as they occur.

## Action 3.3: Identify and develop control and management guidelines for pig movement restrictions during an ASF response (including allowable movements to and from sales, markets, shows and cultural events, etc.)

**Samoa is fortunate to have the opportunity to learn from overseas experience and research and should use this to prepare for ASF in the Samoan environment.**

African Swine Fever is significant in terms of its economic, environmental and social impacts, not only from the disease itself but also movement restrictions applied to control the disease. Disease dynamics differ between countries and regions and management strategies should be designed for the Samoan setting.

A key feature of a response program is the presence of government-funded extension and extension officers who serve as an interface between regulators, the pig industry, and the community. The African Swine Fever Response Strategy for Samoa provides guidance on the implementation of movement restrictions on pigs and pig products.

Actions required are:

- Identify and engage with all government and non-government bodies involved in the initiation, conduct and control of the movement of pigs within Samoa;
- Organise meetings and workshops with representatives of each body to ensure common understanding of the significance of movement controls in the event of an ASF outbreak and agree to protocols and processes to implement and oversee such controls in the event of an outbreak of ASF;
- Involve all relevant stakeholders in development of movement control protocols (including options for the movement of pigs to and from sales, markets, shows and cultural events etc); and
- Agree upon the basis for declaring pigs as disease-free for the purposes of movement within Samoa and establish risk-based protocols for authorising, recording, reporting and monitoring the movements of disease-free pigs within Samoa.

**Table 5: Summary table of Action Area 3: RESPONSE**

| Action Area 3 | | Priority | Timeframe * |
|---|---|---|---|
| **Action 3.1** | Develop comprehensive national contingency plans and supporting operational procedures and test through a national simulation exercise. | High | Short term |
| **Action 3.2** | Develop tools and systems to capture, store and analyse real-time surveillance, spatial and diagnostic data to support a response in the Samoan context. | High | Short term |
| **Action 3.3** | Identify and develop control and management guidelines for pig movement restrictions during an ASF response (including allowable movements to and from sales, markets, shows and cultural events, etc.) | High | Medium term |

*** Indicative timeframes: SHORT up to 3 years; MEDIUM 4 to 8 years; LONG up to 10 years**

# Action Area 4: Recovery

A comprehensive, well and widely understood recovery plan is crucial to the successful elimination of a disease like ASF. Stakeholders that may be adversely affected by ASF need to be confident that their interests will be recognised and protected in a Response Plan. As Samoa recovers from an incursion of ASF it is important that all stakeholders contribute to the extent required in the Response phase to achieve rapid control and elimination of the disease.

For Samoa it is most likely that an incursion of ASF will initially be confined to one of the two main islands, providing the opportunity for other parts of the country to continue pig raising activities 'as normal' subject to early and effective identification and isolation of affected islands and areas within them.

It is expected that commercial producers will have a significant lead role in recovery, reinforcing the required provisions for the management of an ASF outbreak.

## Action 4.1: Identify and establish Zoning plans and protocols

**There is a need for Samoa to establish a plan for geographic isolation of areas of the country affected by an incursion of African Swine Fever, to ensure that economic, social and cultural disruption is minimised in unaffected, protected areas of the country.**

An incursion of ASF may not occur throughout Samoa particularly if detected early, and containment measures should be focussed on the specific areas affected by the disease, with controls to prevent ASF crossing into disease free islands and/or localities.

Actions required are:

- Undertake a mapping of pig production and the capability to measure the risk of ASF across Samoa to identify opportunities to establish protected and free Zones in the event of an incursion of ASF; and
- Develop protocols for the establishment, enforcement, monitoring and management of the Zones with a focus upon effective control of the movement of pigs and people, equipment and materials that may be in contact with pigs and be capable of transferring ASF, within and between Zones.

## Action 4.2: Identify and establish support and recovery arrangements for each of the different scales of pig-raising practiced in Samoa

**Pig farmers in Samoa will be concerned that, without support and recovery mechanisms, pigs that die or are destroyed following an ASF outbreak, will need to be replaced at their own cost, and may resist reporting sick or dying pigs.**

Effective management of an ASF outbreak needs to consider the procedures by which the owner of affected pigs will be supported in the event that the pigs die or are destroyed. Resistance to declaring pigs as being ill may occur if suitable arrangements are not in place and communicated. This may significantly hamper an effective disease response.

Support and recovery could be in various forms. It may be financial, or it may involve assistance and support with the replacement of healthy pigs once the disease has disappeared from an area and assistance in accessing pork for human consumption for the period that domestic production is interrupted.

Actions required are:

- Review support and recovery approaches and mechanisms in countries where these exist, particularly 'non-financial' support arrangements for pig owners applying in ASF affected countries, such as Timor Leste;
- Undertake a review and modelling of economic, food security and social well being outcomes from pig-raising as practiced in Samoa to understand the value of pigs to their owners at each level of production;

- Engage with pig producers and (where appropriate) their service providers at each level of production to explain the outcomes of the modelling referred to above and to explore options for support and recovery when pigs have been lost; and
- Develop and communicate arrangements for the provision of support and recovery in circumstances where an incursion of ASF necessitates the destruction of pigs and/or the disruption of other aspects of pig keeping and production in Samoa that have a financial, social or cultural impact on pig owners.

## Action 4.3: Develop plans for restocking affected businesses and communities

**Pig production is a mainstay of food security in Samoa and supports important cultural traditions and economic well being**

The replacement of pig herds is necessary to avoid undue disruption to pork production and to community and village life throughout Samoa. It is an essential element to maintain social cohesion in the Recovery phase.

The supply of alternative pig products will need to be met from disease free sources and require complex supply lines to access goods. Pre-planning is required to support the supply of pig products from outside of Samoa.

Actions required are:

- As part of the review and modelling proposed under Action Area 4.2 above, and consistent with Zoning protocols proposed under Action Area 4.1 above, identify potential demand for and sources of pigs for restocking herds impacted by an incursion of ASF;
- Develop processes and protocols for acquiring disease-free local strains/breeds of pigs to safely restock affected traditional/village level herds at the conclusion of an ASF incursion, noting that restocking of commercial herds may necessitate the 'breeding up' of pigs from ASF free areas of Samoa, or importation of appropriate stock from Australia and/or New Zealand, or other Pacific Island countries;
- Establish processes to monitor the availability of pig products to Samoan consumers in the event of an outbreak of ASF in the country;
- Define trigger points for the importation of such products to maintain an orderly market for them within Samoa; and
- Establish arrangements for reliable sourcing of supplies of these products consistent with Samoa's pork importation policies and regulations in the event of an ASF incursion.

**Table 6: Summary table of Action Area 4: RECOVERY**

| Action Area 4 | | Priority | Timeframe * |
|---|---|---|---|
| **Action 4.1** | Identify and establish Zoning plans and protocols exercise. | High | Short term |
| **Action 4.2** | Identify and establish support arrangements for each of the different scales of pig-raising | Medium | Medium term |
| **Action 4.3** | Develop plans for restocking affected pig raising businesses and communities. | Medium | Medium term |

*** Indicative timeframes: SHORT up to 3 years; MEDIUM 4 to 8 years; LONG up to 10 years**

# Action Area 5: Cross-Cutting Issues

Effective and efficient implementation of any or all of the activities proposed above will require the availability of a range of support structures and services that are common to all. For the purposes of this analysis and plan these common preconditions and requirements are termed 'Cross-Cutting Initiatives' and are outlined below.

## Action 5.1: Develop standards and protocols to ensure a whole-of-government commitment to a National response in the event of an incursion of ASF.

**A whole-of-government commitment to the Samoan National ASF Action Plan is the key to the achievement of expected outcomes to deal with an ASF outbreak.**

ASF in Samoa would impact on a diverse range of stakeholders, including commercial and village pig producers, all levels of government, non-government organisations and individuals. A whole-of-government strategy would support the integration of effort across agencies, minimising duplication, avoiding gaps and ensuring a consistent and sustainable approach to the disease.

The strategy should build on and enhance current industry, government and community training, education and outreach programs to ensure there is national capability to prepare for and respond to ASF.

Actions required are:

- Identify the government agency(ies) best equipped and authorised to undertake the tasks and responsibilities specified in the Response and Surveillance Strategies and Pig Biosecurity Guidelines;
- Review the whole of government arrangements that applied to Samoa's response to Covid 19 to identify what aspects of those arrangements would apply in principal or practice to an incursion of ASF;
- Ensure that the roles and responsibilities of various agencies during an ASF response are clear and develop/establish appropriate Samoa Government policy for an effective whole-of-government response; and
- Plan and undertake a desk-top simulation exercise to test the effectiveness of the response and identify any deficiencies that need to be addressed.

## Action 5.2: Develop and implement communication and awareness processes for each of Government, pig industry, tourism and civil society across all Action Areas identified above.

**There is a need for national awareness and understanding of the risks posed by African Swine Fever**

While there are a number of generic communication activities about biosecurity, and some specific activities relating to ASF, raising awareness to drive change is of critical importance. A communication and engagement strategy needs to raise awareness about the disease, promoting prevention, on farm and in village biosecurity and general surveillance.

Relevant messages need to be targeted to all stakeholder groups; for example, messaging should be strongly conveyed to the commercial and village industry and the general public about the high level of risk to Samoa of infected pigs, and the impacts of attempting to bring infected material to Samoa through mainstream channels.

Targeted communication outreach programs will draw on the available mapping of pig producers across Samoa and identification of their capabilities to respond to an ASF outbreak. The programs should be delivered to relevant stakeholders to enhance the national awareness and overall preparedness for the threat of ASF, with a focus given to the peri-urban environment and village pig producers. As necessary, church and other community groups should be part of these programs.

Actions required are:

- Identify the communication and awareness needs and opportunities arising from the various Activities specified in this Implementation Plan as well as the Surveillance, Response and Biosecurity documents strategies and guidelines provided separately
- Identify the communications media that are relevant to each of the population groups involved in pig production, including traditional (radio, television. print) and social (online chat and messaging) media
- Develop Communication and Awareness Plans for each of the audience groups identified above, ensuring that the messages and the media employed for each audience are appropriate, including

  – quarantine border control,
  – biosecurity on farms, and
  – clinical signs of ASF for ease of identification on farms and a quicker response from farmers

- Contract the production and distribution of Communication and Awareness materials to agencies and enterprises that are expert in dealing with the audience to be engaged
- Implement communication and awareness campaigns consistent with the circumstances prevailing regarding the threat or presence of ASF in Samoa
- Undertake occasional audit activities to determine the effectiveness of communication and awareness campaigns and adjust as appropriate

## Action 5.3: Develop and initiate training and capacity building programs for all stakeholder sectors.

**Maintaining a national core skill set, succession planning, and building diagnostic and surveillance capacity, is an essential preparedness activity and supports other actions.**

There is a recognised need to build and retain expertise and core skill sets across the different biosecurity disciplines, in particular, veterinary expertise. The recruitment and retention of veterinary expertise is required in Samoa to ensure continuity in the delivery of all aspects of ASF preparedness.

Core capability and capacity in diagnostics and surveillance relies on an ongoing connectivity between experts both nationally and internationally, and in fostering partnerships with relevant institutions outside government and industry. Work needs to continue in Samoa and internationally to assess and build national diagnostic and surveillance capability and capacity.

To enhance preparedness for ASF, there would be benefit in development of a structured program of veterinary and/or para-veterinary training and support, and career opportunities matched to the pig industry, with a view to maintaining long-term core capability. Focus could include animal disease and physiology, animal taxonomy, diagnostics, and surveillance. Regular evaluation of national capability and capacity should be undertaken.

Actions required are:

- Recruit one or more veterinarians to ensure continuity of employment in Samoa to deal with ASF preparedness;
- Develop an inventory of the skills and capacities that are required in Samoa, to detect and respond to an incursion of ASF;

- Review available training materials and courses to determine their appropriateness to current best practice standards as they apply to the detection of, and response to, an incursion of ASF, especially in collaboration with available agricultural in-country training and educational providers at the University of the South Pacific's (USP) School of Agriculture, Geography, Environment, Oceans and Natural Sciences at the Samoa Campus as well as the National University of Samoa;
- Update existing and develop new training materials and courses, indicated as necessary by the above review;
- In parallel, develop a model of the number of people competent in each of the skills areas identified above, required to sustain an appropriate level of surveillance and response to an incursion of ASF in Samoa;
- Review the numbers of people who are trained in each of the skills and the currency of their training and develop training programs to ensure the availability of adequate numbers of trained personnel to respond to an incursion of ASF; and
- Identify and engage with relevant international NGOs and charities, such as 'Veterinarians without Borders' that may be able to provide assistance in training local resources and/or provide resources in the event of an outbreak of ASF in Samoa.

## Action 5.4: Establish protocols and networks to ensure that Samoa is aware of and implementing evolving international best-practice standards with regard to prevention, detection and response to an incursion of ASF.

**Collaboration and regular exchange of information at the international level will support preparedness for ASF within Samoa both regionally and beyond.**

Successful implementation of the actions identified in this Plan are dependent on collaboration and information sharing across pig production industries, all levels of government, non-government organisations and between experts, both nationally and internationally. This should occur at both an organisational and individual level.

Collaborative opportunities, amongst others, which could be explored include the following.

- Review and update arrangements with SPC, OIE, FAO and relevant agencies in Australia and New Zealand to ensure that any developments regarding the pathology, detection or response to ASF are communicated to Samoa as a priority;
- Review and refresh arrangements with neighbouring countries, at all relevant levels, to ensure that regional developments in ASF and related activities are shared in a timely fashion and to ensure where practicable and appropriate, that resources (human, equipment and material) are compatible and available to share in the event of an outbreak of ASF in one or other of the countries;
- Where opportunities arise, undertake to host seminars, workshops (virtual and in person) and research programs to ensure that Samoa has optimal engagement with, and exposure to, current information and best practice standards relating to the detection and management of ASF; and
- Review communication networks, particularly the internet, to ensure that they are capable of supporting the traffic required to ensure reliable access to international expertise and assistance.

**Table 7 Summary table of Action Area 5: CROSS-CUTTING ISSUES**

| Action Area 5 | | Priority | Timeframe * |
|---|---|---|---|
| **Action 5.1** | Develop standards and protocols to endure a whole-of-government commitment to the National ASF Action Plan in the event of an incursion of ASF | High | Short term |
| **Action 5.2** | Develop and implement communications and awareness processes for each of Government, pig industry, tourism and civil society, across all Action Areas identified above. | High | Short term |
| **Action 5.3** | Develop and initiate training and capacity building programs for all stakeholder sectors. | High | Short term |
| **Action 5.4** | Establish protocols and networks to ensure that Samoa is aware of and implementing evolving international best-practice standards with regard to prevention, detection and response to an incursion of ASF. | Medium | Medium term |

*** Indicative timeframes: SHORT up to 3 years; MEDIUM 4 to 8 years; LONG up to 10 years.**

# 6. Implementation

The success of the National Action Plan depends on a high level of cooperation and a structured approach to implementation.

The Plan is supported by an implementation schedule which will be used to:

- record the progress of actions;
- set out key performance indicators, roles, responsibilities and funding mechanisms; and
- communicate with stakeholders on progress.

The success of the National Action Plan depends on a high level of cooperation between all segments of the pig industry (commercial, semi-commercial and village), all levels of government, non-government organisations, community groups and individuals, experts and research agencies. It is necessary to have a clear understanding of participants' roles and responsibilities and ensuring that adequate resources are allocated to protect Samoa's environment, primary industries, urban infrastructure and way of life.

Investment in ASF-related activities is anticipated to be guided by the Plan, drawing on new or existing funding mechanisms, both domestic and international.

The relevant national committee for animal biosecurity should oversee implementation of the Plan on behalf of the Samoa Government. Relevant peak industry bodies will need to be engaged on implementing the Plan through the appointed National ASF Preparedness Coordinator, relevant Government and international funders and other relevant interests.

# 7. Monitoring, evaluation and review

The Samoa Government should authorise the appropriate oversight agency to undertake an annual review of progress on implementation of the Plan in collaboration with the pig industry and relevant stakeholders and report on the outcomes. Relevant pig industry bodies and civil society organisations will be responsible for communicating outcomes to their members and constituents.

The Plan will be formally reviewed every five years using a monitoring and evaluation framework. However, the actions set out in the Plan will evolve as knowledge is gained through research and Samoan and overseas experience.

# 8. Relevant sources of information

**African Swine Fever: Detection and Diagnosis - A Manual for Veterinarians**, FAO, 2017

**African Swine Fever (ASF) Response Strategy Samoa**, Impact Consulting Group for PHAMA Plus, 2022

**African Swine Fever (ASF) Surveillance Strategy Samoa** Impact Consulting Group for PHAMA Plus (forthcoming)

**Compartmentalisation Guidelines, African Swine Fever**, OIE World Organisation for Animal Health, 2021

**Biosecurity Code of Practice for the Management and Keeping of Pigs in Samoa**, Impact Consulting Group for PHAMA Plus, 2022

**Good Emergency Management Practice: The Essentials - A Guide to Preparing for Animal Health Emergencies**, FAO, 2011

**Ingenasa African Swine Fever Antigen Rapid Test Samoa**, (forthcoming)

**Social and Economic Impact of African Swine Fever (ASAF) in the Pacific Island Countries**, PHAMA Plus, 2020

**Standard Operating Procedures and Guidelines for Handling Imported Pork Products, including inspection, import clearance, detention and incineration to minimise the risk of exposing Samoa to African Swine Fever**, Impact Consulting Group for PHAMA Plus (forthcoming)

**Surveillance for African Swine Fever, Training Powerpoint, Samoa**, Impact Consulting Group for PHAMA Plus, 2021

# 9. Acronyms and abbreviations

| | |
|---|---|
| **ACDP** | Australian Centre for Disease Preparedness, formerly known as the Australian Animal Health Laboratory |
| **AcrGIS** | Software used for creating and using maps, compiling geographic data, analyzing mapped information, sharing and discovering geographic information, using maps and geographic information in a range of applications, and managing geographic information in a database. |
| **APHD** | Animal Production and Health Division, MAF Samoa |
| **ASF** | African Swine Fever |
| **CSIRO** | Commonwealth Scientific and Industrial Research Organisation, Australia |
| **CSR** | Classic Swine Fever |
| **ELISA** | The enzyme-linked immunosorbent assay (ELISA) is an immunological assay commonly used to measure antibodies, antigens, proteins and glycoproteins in biological samples. |
| **FAO** | United Nations Food and Agriculture Organisation |
| **MAF** | Ministry of Agriculture and Fisheries, Samoa |
| **MOU** | Memorandum of Understanding |
| **OIE** | World Organisation for Animal Health |
| **PCR** | A polymerase chain reaction (PCR) test, performed to detect genetic material from a specific organism, such as a virus |
| **PHAMA Plus** | Pacific Horticulture & Agricultural Market Access Plus Program |
| **SOP** | Standard Operating Procedure |
| **SQS** | Samoa Quarantine Service |
| **SPC** | The Pacific Community |
| **UPC** | University of the South Pacific |

# 10. Definitions/ Glossary

| | |
|---|---|
| **Asset based protection/ management** | The asset-based protection approach is to manage the animal species only where reducing its adverse effects provides the greatest benefits by achieving protection and restoration outcomes for specific highly valued assets. |
| **Biosecurity activity** | An activity that mitigates the risks and impacts to the economy, the environment, social amenity or human health associated with pests and diseases. |
| **Biosecurity continuum** | An integrated approach to prevent, detect, contain, eradicate and/or lessen the impact of a pest or disease through complementary biosecurity activities undertaken offshore (in other countries), at the border and onshore (within Samoa) |
| **Biosecurity risk** | The likelihood of a disease or pest entering Samoan territory or a part of Samoan territory; or establishing itself or spreading in Samoan territory or a part of Samoan territory; and the potential for any of the following: the disease or pest to cause harm to human, animal or plant health; the disease or pest to cause harm to the environment; economic consequences associated with the entry, establishment or spread of the disease or pest. |
| **Containment** | Restricting a detection of an invasive species/emergency plant pest to a defined area without the goal of eradication. |
| **Conveyance** | A means of transport such as an aircraft, vessel, vehicle, or train. |
| **Detection** | Finding the species through inspection and/or surveillance. |
| **Eradication** | Eliminating a pest or disease from an area. Eradication is indicated by the pest or disease no longer being detectable. |
| **Established** | A pest or disease that, for the foreseeable future, is perpetuated within any area and which it is deemed not feasible (either technically or as a result of a benefit/ cost analysis) to eradicate. |
| **Exotic** | A species that is not present in Samoa or is present but under official control. |
| **Native** | A species, subspecies, or lower taxon, occurring within its natural range (past or present) and dispersal potential (i.e. within the range it occupies naturally or could occupy without direct or indirect introduction or care by humans). |
| **Prevention** | Stopping the introduction of a species into Samoa. |
| **Response** | The management actions undertaken when an invasive species/emergency plant pest is detected. The response may be formalised through a national agreement or response plan. |
| **Surveillance** | The systematic investigation, over time, of a population or area to collect data and information about the presence, incidence, prevalence or geographical extent of a pest or disease. Surveillance includes active and passive approaches. |

# NATIONAL AFRICAN SWINE FEVER ACTION PLAN SAMOA 2022