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## STRENGTHENING BIOSECURITY PREPAREDNESS THROUGH ENHANCED RAPID DETECTION OF AFRICAN SWINE FEVER IN PAPUA NEW GUINEA

March 2021

SDGs:



Countries:

Papua New Guinea

Project Codes:

TCP/PNG/3706

FAO Contribution

USD 250 000

Duration:

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Contact Info:

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### Implementing Partners

National Agriculture Quarantine and Inspection Authority (NAQIA), Department of Agriculture and Livestock (DAL), Livestock Development Corporation (LDC), National Agricultural Research Institute (NARI).

### Beneficiaries

NAQIA, Provincial Administrations for Enga, Southern Highlands and Hela provinces.

### Country Programming Framework (CPF) Outputs

FAO Papua New Guinea (PNG) CPF - Priority 2: Strengthening resilience for food security and nutrition.

PNG Medium-Term Development Plan (MTDP) 3.

Key Result Area (KRA) 7: Manage and reduce the risk of natural disasters thereby increasing the resilience of PNG communities to disasters.



## BACKGROUND

African Swine Fever (ASF) is a highly contagious and fatal hemorrhagic viral disease that affects susceptible *Suidae* family, including pigs and wild boars. In 2019, an expert team from the Emergency Management Centre for Animal Health (EMC-AH) FAO conducted a Rapid Preparedness Assessment for ASF in Papua New Guinea, and concluded that the country was on high alert for an imminent incursion. Recommendations were given to the National Agriculture Quarantine and Inspection Authority (NAQIA), the country's mandated Biosecurity and Veterinary service, on active reporting and surveillance, early detection, control and containment of ASF in the event of an incursion. The Mission team, in collaboration with the NAQIA, the Department of Agriculture and Livestock (DAL) and other relevant agencies and stakeholders, identified high-risk entry pathways for ASF, namely the Indonesia and Papua New Guinea land borders, airports and seaports, through mining, logging and construction sites with Chinese or Asian contractors and/or workers. The early detection of ASF was pertinent in the efficient and timely control and containment of the disease. Given the high socio-economic value of pigs in the country, particularly in the Highlands Region, it was imperative that an incursion be prevented and that ASF be kept out of this region.

Against this background, the project was designed to address gaps identified in the existing animal surveillance system in the NAQIA, and to strengthen the technical capacity of the NAQIA, the DAL and relevant agencies' officers in active surveillance and reporting, diagnostics, and risk communication, to enable rapid detection and early containment of ASF incursion in the country.

## IMPACT

The project assisted in strengthening and upscaling the country's biosecurity services, and in building a resilient agriculture system. It is expected that this will contribute to improving food security and nutrition, as well as ensuring people's livelihoods, amid the threat of an ASF incursion in Papua New Guinea.



## ACHIEVEMENT OF RESULTS

The COVID-19 pandemic impeded the implementation of some of the activities, especially those concerning training. In addition, the outbreak of ASF in the hinterlands of the Highlands Region made it necessary to realign and review some of the activities to address the incursion, switching to response mode. Despite these setbacks, most of the planned activities were implemented. A risk communication campaign was successfully rolled out, an active surveillance and monitoring system was established, and field and laboratory staff were capacitated in effective diagnostics and reporting. In addition, control measures were introduced by establishing checkpoints and raising awareness in the targeted areas. Although more needs to be done to fully capacitate the NAQIA, the project laid good foundations to build and expand on.

It was confirmed that ASF was present in the country during an investigative mission supported by the project, in response to claims of pigs dying in large numbers. FAO assisted with the procurement of Personal Protective Equipment (PPE) and field consumables, and with the establishment of checkpoints and Local Disease Control Centres (LDCCs) in the three affected provinces (Southern Highlands, Hela and Enga), to control and monitor the movement of live pigs and pork products. In addition, a call centre was established in NAQIA Animal Management Section to monitor calls and reports around the country, and the reports were relayed to NAQIA or DAL officers on the ground to investigate and conduct rapid field tests.

ASF antigen and antibody enzyme-linked immunosorbent assay (ELISA) test kits were procured to support early detection during the investigative mission and the two delimiting surveys conducted by the NAQIA. Technical guidance and advice were also provided for the development of standard operating procedures (SOPs) for sample collections.

Awareness and advocacy campaigns on ASF were carried out in the infected areas, as well as in target areas that were prone to the spread of the disease. This was accompanied by the distribution of awareness materials, both in English and the local language of Pidgin.

Technical capacities were strengthened to enable early detection and containment of ASF. This was achieved through training provided to NAQIA animal health officers on diagnostics, control and ASF management practices, as well as on regional risk communication. Workshops were also conducted to capacitate officers on the ground in using the active reporting system in the ASF-infected provinces, in conjunction with stock inspector training sessions, during the height of infection, in April 2020.

In addition, 500 sentinel herds were identified within the ASF-infected provinces, to monitor and study the extent of the spread of the virus within the rural communities.

## IMPLEMENTATION OF WORK PLAN AND BUDGET

Despite the setbacks encountered during the project, most of the planned activities were implemented within the established time frame. The six-month work plan developed by the Technical Working Group ([TWG] comprising NAQIA and key government agencies, developing partners, NGOs' education institutes and private and public stakeholders) provided guidelines on implementing the activities.

Most of the security risks encountered were anticipated in the risk management matrix, thus the mitigation plans in place were followed, and impact was minimal during the project. With regard to law-and-order issues, precautionary measures were taken in consultation with local government, stakeholders and faith-based groups, in consultation with the United Nations Department of Safety and Security (UNDSS). As a result of the local connections, relationships and networks established by the field team, security and social impediments were handled effectively, adapting to alternate and viable solutions.

## FOLLOW-UP FOR GOVERNMENT ATTENTION

The Government will liaise with relevant partners in order to conduct virtual training sessions, especially in relation to diagnostic and field testing, using mobile Polymerase Chain Reaction (PCR) equipment. The PCR equipment donated by the European Union (EU) to NAQIA needs to be installed in its laboratory. In addition, NAQIA staff should be trained to use the laboratory and mobile field PCR equipment.

## SUSTAINABILITY

### 1. Capacity development

The project outcome supports the existing National Food Security Policy (2018-2027) and the Medium-Term Development Plan (2020-2022), substantiating the sustainability of the project. The Biosecurity Bill is an impending legal framework that is to be endorsed and gazetted by the Government of Papua New Guinea; this will further support the sustainability of the project. The Biosecurity Bill was drafted by the NAQIA and was included in the six-month work plan (June-December 2020) to progress on its development, and endorsement and adoption.

The project strengthened NAQIA's technical capacity on surveillance, field diagnostics and active reporting, which is also useful in the long run for other biosecurity threats. It is within NAQIA's own best interest to sustain and utilize the technology and knowledge in other areas within the sector.

In addition, FAO is in the initial implementation stages of the United Nations (UN) Joint Programme in Southern Highlands and Hela provinces, which will enable the continuation and increased results base of this project.

The project strengthened relationships and partnerships at different levels of the Government and between key government agencies. The ASF incursion had an adverse impact, affecting the country's socio-economy, social structure and livelihoods; thus, elaborate partnerships with all relevant stakeholders were required to enforce the control and containment of the disease.

The National ASF Emergency Response Taskforce (NAERT) was formed with all relevant government agencies, private and public stakeholders and development partners, to address ASF in collaboration and partnership at the national level. In addition, the Chief Veterinary Officer formed the Technical Working Group (TWG) to monitor the implementation of the activities. This allowed for transparency and avoided the duplication of activities, enabling resources to be used efficiently and effectively. FAO is part of the TWG, and high-level advocacy was done through the UN Disaster Management team (DMT) to advocate on the risk and impact of ASF. Community-level awareness was conducted through sister UN agencies and other humanitarian partners.



Other local partnerships were formed with Non-governmental Organizations (NGOs) and community-based organizations (CBOs) at provincial and district levels, enabling extensive risk communication campaigns, surveillance and reporting of ASF at the community level.

The NAQIA was also able to take advantage of the COVID-19 movement restriction measures, enforcing the restriction of pig movements within and between provinces. This clearly exemplifies the importance of establishing good partnerships and alliance between all government stakeholders.

The project will be a blueprint for a future active surveillance system for the NAQIA, not only for ASF detection and containment, but also for biosecurity threats. FAO was able to mobilize more resources through the regional FAO Office for Special Relief Operation (OSRO) project, OSRO/RAP/903/USA, "Strengthening Field Capacities for ASF Detection and Emergency Response", which will support the NAQIA in the implementation of the six-month work plan from January to June 2021.

### 2. Gender equality

Both male and female officers from the NAQIA benefited from the training sessions (virtual), and took part in delimiting surveillance and discussions with technical advisors, to equip and enhance their understanding of ASF disease, its characteristics, risk and control measures and management.

Both genders were involved in risk communication activities, and capacitated on how to approach the rural population, most of whom were illiterate. The target population for the risk communication was inclusive of both men and women in rural, urban and semi-urban areas. Although the pigs are owned by men, most of the pig rearing and care in rural areas is done by women. Therefore, the inclusion of women is crucial in maintaining control and containment of the disease. In the long run, both men and women should be informed on how best to report on and upscale community-level biosecurity.

### 3. Environmental sustainability

The project did not use synthetic agricultural inputs and/or insecticides/pesticides. The waste from the used consumables were disposed of and burned, to reduce environmental damage and health hazards to the public.

### 4. Human Rights-based Approach (HRBA) – in particular Right to Food and Decent Work

The project contributed significantly to achieving human rights, by promoting the participation of both genders and all backgrounds, and empowering the population with information regarding ASF for appropriate and good decision-making. For example, farmers whose pigs had a positive rapid test kit result for ASF voluntarily culled their pigs, after being informed of its danger and effects on pigs and pig farms.

Pigs in Papua New Guinea are a source of protein, especially in the Highlands Region, which could be severely disrupted by the ASF incursion. Right to food encompasses the access, availability, and affordability of nutritious food for people's health and well-being. The project aimed to manage and control the spread and infection of ASF, in order to safeguard an important source of protein.

### 5. Technological sustainability

Smartphones, with the use of WhatsApp, were a useful tool. Field teams provided real-time field updates in the form of reports, data and videos. Information was easily shared and coordinated effectively. Social and print media were also used to boost the visibility of the project.

The toll-free number and call centre in NAQIA allowed for active reporting, resulting in a prompt response from the NAQIA officers based in the provinces.

Through the partnerships created at the provincial and district level, the partners used local knowledge, built the local capacity of farmers and government officials, and encouraged good practices in the promotion of project activities.

The project was locally designed and took into consideration its continuity after closure; therefore, stakeholders and beneficiaries were capacitated to contain and prevent the spread of ASF.

The technical assistance and advice provided through the project was a valuable asset for the NAQIA. As the mandated biosecurity authority in the country, it is imperative that this service is strengthened and functional, as it will be used for other disease outbreak or biosecurity threats. The active reporting and surveillance system enables the NAQIA to have information that will allow it to make informed decisions. This will be incorporated into the animal health sector of the NAQIA to ensure its sustainability.

### 6. Economic sustainability

The situational reports produced through the Food Security Cluster, the UN DMT and development partners' platforms, as well as additional funds from the DFAT and the World Bank, were provided to the NAQIA to support the active reporting system, surveillance and risk communication outreach. Assessments were also provided to collect and collate data on the pig industry in Papua New Guinea. In addition, the UN Joint programme will support ASF work in Tari, Hela Province.



### DOCUMENTS AND OUTREACH PRODUCTS

- ❑ **FAO. 2019.** Rapid Preparedness Assessment for ASF Report. 41 pp.
- ❑ **FAO & NAQIA.** 27 April 2020. African Swine Fever Incursion Response Report.
- ❑ **NAQIA.** ASF Containment, Delimiting. 3-14 April 2020.
- ❑ Awareness posters (1 500) detailing information on ASF, its signs and symptoms and advice on how to prevent spreading.

## ACHIEVEMENT OF RESULTS - LOGICAL FRAMEWORK

Expected Impact	The livelihood and food security of people are protected and ensured amidst the threat of an Africa Swine Fever incursion in Papua New Guinea		
Outcome	Active biosecurity surveillance capacity is strengthened to enable rapid detection and early containment of African Swine Fever incursion in Papua New Guinea		
	Indicator	Risk pathways identified for ASF, an early warning system established and implemented for ASF to enable the rapid detection of an ASF incursion for early containment and spread mitigation.	
	Baseline	PNG's animal disease reporting and surveillance systems are primarily passive and insufficient for prompt detection of an ASF incursion.	
	End Target	Veterinary services and partners develop and implement targeted awareness and advocacy campaigns, for active surveillance, rapid detection, laboratory confirmation and reporting.	
	Comments and follow-up action to be taken	Risk pathways were identified for ASF, and control measures were introduced by establishing checkpoints and raising awareness. The objective of the emergency Technical Cooperation Programme (TCP) project was to strengthen the capacity of national veterinary services, in preparedness for an ASF incursion. The outbreak of ASF in the hinterlands of the Highlands Region, in early March 2020, made it necessary to switch to response mode, and to realign and review some of the activities to address the incursion. The project supported enhanced awareness and advocacy for relevant stakeholders, government partners and developing partners. Technical capacities were strengthened to enable early detection and containment of ASF, and awareness was increased in the targeted areas.	
Output 1	Targeted awareness and advocacy campaign are developed and implemented		
	Indicator	Target	Achieved
	Specific awareness and advocacy program developed and delivered through relevant media.	ASF-specific awareness programs are delivered to high-risk regions and target groups.	Yes
Baseline	General biosecurity awareness exists, but there is no specific awareness for ASF along identified risk pathways.		
Comments	<ul style="list-style-type: none"><li>Advocacy and awareness presentations were made to relevant partners, through the Food Security Cluster, the UN DMT, and to development partners and agencies.</li><li>A total of 1 500 A3 ASF posters were printed for dissemination to targeted and disease areas, as well as to non-disease areas.</li><li>Awareness activities were impeded, owing to travel restrictions imposed as control measures for the COVID-19 pandemic.</li><li>Awareness was raised in disease areas, especially in Hela Province, where FAO has maintained presence, despite tribal fighting and disturbance.</li></ul>		
Activity 1.1	Target audiences identified and prioritized for the awareness campaign		
	Achieved	Yes	
	Comments	Target audiences were identified and prioritized for awareness campaigns, upon the completion of the first delimiting survey. Travel restrictions imposed due to the COVID-19 pandemic impeded progress, however, through partnerships established with NGOs and CBOs awareness-raising activities continued, especially with the local communities.	
Activity 1.2	Specific messages developed and produced for various target audiences		
	Achieved	Yes	
	Comments	Awareness posters were translated into the local language of Pidgin for non-English speaking locals.	
Activity 1.3	Targeted awareness campaigns implemented, and specific messages disseminated		
	Achieved	Yes	
	Comments	Campaigns were implemented and specific messages were disseminated on the causes of ASF, and containment measures for controlling its spread, at both local and national levels. Risk communication on ASF was also broadcast and aired through local radio and television networks.	



Activity 1.4	Risk communication training is conducted		
	Achieved	Yes	
	Comments	<ul style="list-style-type: none"><li>– Six NAQIA animal health officers participated in regional risk communication training, which was conducted virtually.</li><li>– Risk communication Training of Trainer (ToT) training was delivered to the DAL Food Security Branch and livestock officers, who, in turn, provided training and disseminated ASF information to provincial and district agriculture and livestock officers. The provincial and district officers raised awareness on ASF at the community level in both the infected and non-infected provinces in the Highlands Region.</li><li>– The first regional workshop for ASF was conducted in Rabaul for the New Guinea Islands Region, with the Pacific Horticultural and Agricultural Market Access (PHAMA Plus) program, under the Australian Department of Foreign Affairs and Trade (DFAT). Participants from all relevant stakeholders participated (private and public stakeholders, NGOs' education institutes, commercial business entities, CBOs and research institutes).</li></ul>	
Output 2	Active reporting and surveillance system targeted for ASF is established and operational		
	Indicator	Target	Achieved
	ASF-specific reporting and surveillance program is developed and actively implemented by NAQIA.	A regular active reporting system is established and implemented parallel to an active surveillance program both targeted to ASF.	Yes
Baseline	A general passive disease reporting and surveillance system exists, but it is not disease-specific.		
Comments	<ul style="list-style-type: none"><li>– The investigative mission to Mendi, Southern Highlands Province, in response to claims of pigs dying in large numbers, was supported by FAO. From this mission it was confirmed that ASF was present in the country.</li><li>– Two delimiting surveys were conducted by NAQIA. FAO assisted with the procurement of PPE and field consumables, and with the establishment of checkpoints and LDCCs in the affected provinces (Southern Highlands and Enga).</li><li>– Checkpoints along the main highways linking the highlands provinces were established, to control and monitor the movement of live pigs and pork products. Eleven checkpoints were erected within the three affected provinces, Southern Highlands, Hela and Enga, and Western Highlands Province was established as the buffer zone.</li></ul>		
Activity 2.1	An active reporting system is identified based on appropriate ICT methodologies		
	Achieved	Yes	
	Comments	A call centre was established in NAQIA Animal Management Section with a toll-free number, which monitored calls and reports around the country of an unusually high number of pigs dying. The reports were relayed to NAQIA officers or DAL officers on the ground, to investigate and conduct rapid field tests. Owners with positive cases of ASF were encouraged to cull and bury pigs. The toll-free number was inserted on all awareness materials, which were distributed nationwide.	
Activity 2.2	Training for users of active reporting system is conducted and reporting program implemented		
	Achieved	Yes	
	Comments	A workshop was conducted in Mendi, Southern Highlands Province and Wabag, Enga Province respectively, to capacitate officers on the ground in using the active reporting system. The training was done in conjunction with stock inspector training sessions in both provinces, and was carried out during the height of infection (April 2020).	
Activity 2.3	An active surveillance program is established		
	Achieved	Yes	
	Comments	<ul style="list-style-type: none"><li>– A call centre was set up with a toll-free number for collecting, collating and passing on information in NAQIA Head Office.</li><li>– 500 sentinel herds were identified within the three ASF-infected provinces and two non-infected provinces (Western Highlands Province and Jiwaka) in the Highlands Region, to monitor and study the extent of the spread of the virus within the rural communities.</li></ul>	
Activity 2.4	A central database is established		
	Achieved	Yes	
	Comments	Provincial LDCCs were established in the epicentre and other ASF-infected hotspots. FAO continued to provide technical support to monitor and report regularly on the extent of the spread of the ASF through the identified sentinel herds. Monthly reports were developed at theLDCCs and circulated through ASF taskforce members and relevant stakeholders.	

Output 3	Diagnostic capabilities for rapid field detection and laboratory confirmation of ASF antigen are established and implemented to support the active surveillance program as recommended from the EMC-AH mission laboratory assessment		
	Indicator	Target	Achieved
	Both field and laboratory capabilities for antigen detection are established and implemented.	Detection of ASF by portable PCR system to be set up – as PCR is the primary method for ASF detection. Arrangements for additional confirmation by PCR should be established with a reference laboratory such as the Australian Centre for Disease Preparedness (ACDP).	Yes
Baseline	There is serology capacity, including experienced and trained staff. ASF antigen and antibody enzyme-linked immunosorbent assay (ELISA) test kits and rapid tests for antibody detection have been purchased. However, quantities are not sufficient and antibody detection kits are not recommended. There is no PCR testing capability.		
Comments	<ul style="list-style-type: none"><li>– ASF antigen and antibody ELISA test kits were procured to support early detection during the investigative mission and the two delimiting surveys conducted by the NAQIA.</li><li>– Technical guidance and advice was given by FAO for the development of SOPs for sample collections, and the consigning of samples to Kila Kila Laboratory in Port Moresby and confirmatory testing of samples in the ACDP laboratory in Australia were carried out.</li><li>– Owing to the COVID-19 pandemic and travel restrictions imposed, it was not possible to conduct the planned training sessions. Officers were not familiar with handling pocket PCR, and hands-on training was required to capacitate officers on correct procedures and mechanisms.</li></ul>		
Activity 3.1	Laboratory and field diagnostic kits and consumables are identified and procured		
	Achieved	Yes	
	Comments	PPE, field consumables and rapid test kits were procured to support field diagnostics.	
Activity 3.2	Training is conducted for field rapid detection, sampling, packaging and consignment of samples		
	Achieved	Yes	
	Comments	Stock inspector training sessions were conducted in Mendi, Southern Highlands Province and Wabag, Enga Province on field diagnostics for field officers, District Livestock Officers (DLOs) and Provincial Livestock Officers (PLOs). Virtual training was provided to NAQIA animal health officers on diagnostics, control and ASF management practices.	



**Partnerships and Outreach**

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