

PNG AUSTRALIA QUARANTINE  
TWINNING SCHEME

Final ICR Report

*Prepared for*

**AusAID**

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## Aid Activity Summary

<b>Aid Activity Name</b>	<b>PNG Quarantine Twinning Scheme (PAQTS)</b>		
AidWorks initiative number	INI889		
Commencement date	March 1, 2007	Completion date	June 30, 2010
Total Australian \$	A\$2 million from AusAID		
Total other \$	Time from NAQIA staff and PNG Provincial agricultural teams		
Delivery organisation(s)	Australian Quarantine Inspection Service (AQIS)		
Implementing Partner(s)	PNG National Agricultural Quarantine Inspection Authority (NAQIA)		
Country/Region	Papua New Guinea (PNG)		
Primary Sector	Rural Development		

## Acknowledgments

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## Author's Details

The evaluation team was led by John Fargher, independent evaluator, with technical inputs from Gavin Edwards, quarantine and bio-security specialist and Mukii Gachugu, AusAID design and evaluation advisor.

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## Executive summary

The Papua New Guinea – Australia Quarantine Twinning Scheme (PAQTS) commenced in March 2007 and will end in June 2010. PAQTS is a formal partnership between the PNG National Agricultural Quarantine Inspection Authority (NAQIA) and the Australian Quarantine Inspection Service (AQIS). AusAID provided A\$2 million for PAQTS.

PAQTS was evaluated against eight criteria: relevance, effectiveness, efficiency, impact and sustainability as well as monitoring and evaluation, gender equality and analysis and learning. The evaluation used a strengths-based approach and builds on AusAID research into effective twinning arrangements. Questions focused on organisational, system and individual capacity as well as the impact changed capacity had in the way NAQIA operates.

### Relevance

PAQTS was relevant to PNG and Australia. The scheme aligns with PNG priorities and contributes to higher level objectives of the Partnership for Development and the Australian aid program. The relevance of PAQTS could have been greater. Better alignment with the NAQIA Corporate Plan and Business and Operational Plan 2008-2012 would have addressed purpose-level change relating to strategic and managerial capabilities in NAQIA.

### Effectiveness

The objective of PAQTS was to improve the institutional capacity of NAQIA and strengthen strategic technical cooperation between NAQIA and AQIS. Institutional capacity was further defined to be the technical, managerial, strategic and procedural capabilities of NAQIA. Analysis of PAQTS activities shows a strong bias towards development of technical capabilities – a bias that reduced the effectiveness of PAQTS despite the quality of technical activities.

Relationships between senior staff in NAQIA and AQIS were reinforced and maintained by PAQTS. These relationships are a tangible outcome of PAQTS that was built on ongoing knowledge-sharing and dialogue between the agencies. Long-term relationships between NAQIA and AQIS are the foundation on which any bilateral emergency response would be built. This has significant value to both countries. Effectiveness could have been much greater if the development needs of NAQIA as an organisation were addressed – the strategic, managerial and procedural capabilities needed to effectively attract resources, influence policy-makers and communicate with stakeholders. Few activities under PAQTS reflect the strategic opportunities for change identified in the capacity review or Quarantine Risk Assessment. The five PAQTS outcomes included strengthening organisational capabilities in NAQIA – something that the 2007 Capacity Review confirmed as a priority need (for example 35 of the 73 recommendations in that review related to organisational and managerial capabilities) and yet no activities explicitly addressed development of these capabilities.

### Efficiency

Overall the management of PAQTS resulted in efficient use of resources. Twinning is an appropriate and efficient capacity development modality. More outcomes could have been achieved for the same inputs if the development needs of NAQIA had driven the selection of activities to be implemented by PAQTS. Such an approach would have better addressed sustainability risks and aligned more efficiently with the NAQIA Corporate as well as Business and Operational plans.

### Impact

The impact of changes attributable to PAQTS were evaluated for NAQIA capacity to operate as an effective organisation and against the 5 PAQTS outcomes. PAQTS contributed to developing NAQIA capacities to carry out technical, service delivery and logistical tasks; but did not impact on NAQIA capabilities to commit and engage; relate and to attract resources and support; adapt and self-renew or balance diversity and coherence.

Against the five outcomes PAQTS had the greatest impact on knowledge and skills transfer from AQIS to NAQIA (Outcome 4) and establishing an inter-organisational partnership (Outcome 5). PAQTS had some impact on strengthened institutional capacity of NAQIA (Outcome 1); the ability of NAQIA to prevent incursions (Outcome 2) and improved capacity to support international market access and trade (Outcome 3).

### Sustainability

Of the 5 PAQTS outcomes sustainability is most likely for the relationship between NAQIA and AQIS (Outcome 5) and the improved ability of NAQIA to detect, monitor and control exotic pests and diseases (some of Outcome 3). A more strategic approach to PAQTS by NAQIA, AQIS and AusAID would have identified the improved financial position of NAQIA as well as the agency's relatively strong cost recovery base and concluded that more sustainable outcomes could have been achieved by focussing more on priorities aligned with the mandate and PNG focus of NAQIA.

### Gender

PAQTS did not explicitly advance gender equality or promote women. Considering the four dimensions of gender equality: women had access to PAQTS training activities but broader *access* opportunities were not taken; there is no evidence that women from NAQIA were involved in *decision making* with respect to PAQTS activities; no PAQTS activities were designed to deliver *women's rights* and neither NAQIA nor AQIS recorded gender-disaggregated data for participants in training and other *capacity development* activities but 25% is the estimated level of participation by women.

### Monitoring and evaluation

PAQTS had a limited monitoring system and did not use evaluations to inform management of the scheme. The monitoring that was conducted focused on inputs and activities – it did not effectively measure progress towards meeting PAQTS outcomes. Of the monitoring data that was collected, none was gender disaggregated and there is no evidence of data being analysed to provide information for management of PAQTS. The limited range of quantitative performance information restricted the ability of this ICR to provide quantitative examples to illustrate lessons learned from the evaluation.

### Analysis and continuous learning

PAQTS was informed by sound technical analysis from AQIS and NAQIA – the 2007 Capacity Review and the Quarantine Risk Assessment are good examples. There is little evidence that implementation of PAQTS was informed by continuous learning.

### Lessons learned/recommendations

Key lessons learned from terminal evaluation of PAQTS include:

- twinning is an effective modality;
- AQIS is an appropriate twinning partner for NAQIA;
- NAQIA needs include strategic and managerial capacity development;
- a balance of technical and strategic/managerial AQIS staff could have added more value to NAQIA;
- PNG priority needs should drive selection of activities;
- relationships could have been structured to have NAQIA in a decisive position;
- make better use of NAQIA Board;
- more active supervision by AusAID would add value; and
- true twinning offers additional opportunities for key staff.

There are many stakeholders who contribute to the delivery of biosecurity in PNG and participated in PAQTS. Communicating lessons learned from this evaluation to these stakeholders is an important part of the on-going maintenance of the relationship between NAQIA and AQIS, which is important for PNG and Australia.

The ratings against the evaluation criteria are presented below (see Section 3 for details).

Evaluation Criteria	Rating (1-6)
Relevance	4
Effectiveness	4
Efficiency	4
Sustainability	3
Gender Equality	2
Monitoring & Evaluation	3
Analysis & Learning	3

## Acronyms

ACIAR	Australian Centre for International Agricultural Research
AFAS	Australian Fumigation Accreditation Scheme
AQIS	Australian Quarantine Inspection Service
ARDSF	Agricultural Research and Development Support Facility
AUD	Australian Dollar
AusAID	Australian Agency for International Development
CCI	Cocoa and Coconut Institute
CD	Capacity Development
CIC	Coffee Industry Corporation
DAFF	Australian Department of Agriculture Fisheries and Forestry
DAL	PNG Department of Agriculture and Livestock
DNPM	PNG Department of National Planning and Monitoring
DPLGA	PNG Department of Provincial and Local Government Affairs
DSIP	District Services Improvement Program
EHP	Eastern Highlands Province
FPDA	Fresh Produce Development Authority
GoPNG	Government of Papua New Guinea
HR	Human Resources
ICR	Independent Completion Report
IT	Information Technology
ISP	Independent Service Provider
LLG	Lower Level Government
M&E	Monitoring and Evaluation
MTDS	Medium Term Development Strategy
MTR	Mid Term Review
NAQIA	National Agricultural Quarantine Inspection Agency
NAQS	Northern Australia Quarantine Strategy
NARI	National Agricultural Research Institute
NARS	National Agricultural Research System
NDoH	National Department of Health
NEFC	National Economic and Fiscal Commission
NRI	National Research Institute
NSP	National Strategic Plan
ODA	Overseas Development Assistance
ORD	Office for Rural Development
PA	Provincial Administrator
PAQTS	Papua New Guinea Australia Quarantine Twinning Scheme
PFD	Partnership for Development
PMT	Provincial Management Team
PNG	Papua New Guinea
QRA	Quarantine Risk Assessment
RMEF	Reporting Monitoring and Evaluation Framework
ROU	Record of Understanding
SDMM	Service Delivery Mechanism Model
SWOT	Strengths Weaknesses Opportunities Threats
TA	Technical Assistance

# 1 Introduction

## 1.1 Activity background

The Papua New Guinea – Australia Quarantine Twinning Scheme (PAQTS) commenced in March 2007 and ends in June 2010. PAQTS was a formal partnership between the PNG National Agricultural Quarantine Inspection Authority (NAQIA) and the Australian Quarantine Inspection Service (AQIS). AusAID provided A\$2 million for PAQTS.

The goal of PAQTS was to assist PNG to improve quarantine standards, and to build capacity for the prevention of incursions and the early detection and control of exotic pests and diseases, by strengthening the performance of NAQIA. The purpose was to improve the technical, managerial, strategic and procedural capabilities of NAQIA and strengthen strategic technical cooperation between NAQIA and AQIS. The scheme had five planned outcomes:

- strengthened institutional capacity of NAQIA through improving the agency's organisational, human resource and technical capabilities;
- improved ability by PNG to prevent incursions and to detect, monitor and control exotic pests and diseases of quarantine concern;
- improved PNG quarantine capacity to support international market access and trade;
- transfer of relevant knowledge and skills from AQIS officials to their PNG counterparts; and
- inter-organisational partnership between AQIS and NAQIA in which there is ongoing knowledge-sharing and dialogue between the agencies.

## 1.2 Evaluation objectives and questions

PAQTS was evaluated against eight criteria: relevance, effectiveness, efficiency, impact and sustainability as well as monitoring and evaluation, gender equality and analysis and learning. The evaluation used a strengths-based approach<sup>1</sup> to ensure that lessons learned are framed in a way that is useful to NAQIA as well as DNPM, DAL, AQIS and AusAID. The evaluation also builds on AusAID research into effective twinning arrangements<sup>2</sup> which was informed by evaluation of the PNG Ombudsman Twinning Program. Questions focus on organisational, system and individual capacity as well as the impact changed capacity has had in the way NAQIA operates, relates to other institutions and delivers value to PNG.

Impact was assessed against perceived changes in NAQIA capacity to operate as an effective organisation, using five core capability measures<sup>3</sup> as shown schematically in Chart 1 and described generally in the purpose as technical, managerial, strategic and procedural capabilities.

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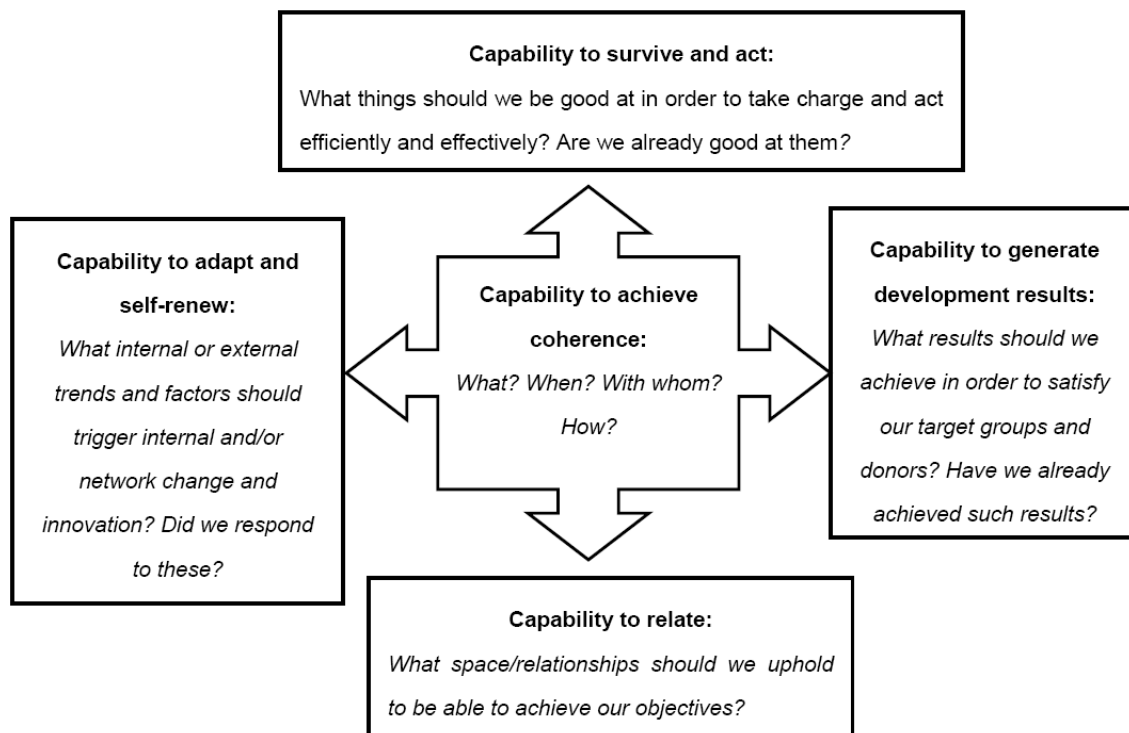
<sup>1</sup> AusAID (2009) Discussion paper on strengths based approaches: advantages and possible uses.

<sup>2</sup> AusAID (2009) Principles and practices for effective twinning.

<sup>3</sup> Baser, H and Morgan, P (2008) Capacity, change and performance. Discussion Paper 59B. European Centre for Development Policy Management. The Netherlands.



**Chart 1 : 5 core capabilities for capacity and performance<sup>4</sup>**



### 1.3 Evaluation scope and methods

Given the scale of the PAQTS investment the ICR was conducted as a rapid appraisal. To ensure independence it was not conducted as a joint or formative evaluation. NAQIA was consulted as a stakeholder but did not provide team members. The scope and methods are set out in the Evaluation Plan presented on November 15, 2009. Field work was conducted between November 18 and 27 in Port Moresby, Eastern Highlands Province and Morobe Province.

### 1.4 Evaluation team

The evaluation was led by John Fargher (Agricultural Scientist, Independent Evaluator) with Gavin Edwards (Quarantine Specialist) and Mukii Gachugu (AusAID AusAID design and evaluation advisor).

<sup>4</sup> Engel, P., Keijzer, N., Land, T. (2006) A balanced approach to monitoring and evaluating capacity and performance. A proposed framework. European Centre for Development Policy Management, Maastricht, the Netherlands.

## 2 Evaluation findings

### 2.1 Relevance

PAQTS is relevant to PNG and Australia. The scheme aligns with PNG priorities and contributes to higher level objectives of the Partnership for Development and the Australian aid program.

PAQTS contributes directly to implementation of the National Agricultural Development Plan 2007 – 2011. For example, Objective 10.1.3 (1) is to prevent and minimize the risk of entry and spread of exotic pests, diseases and weeds and Objective 10.1.3 (2) is to improve collaboration with other countries on animal and plant health and quarantine matters to protect domestic industries and ensure high quality of products, for domestic and overseas markets. The scheme also contributes to the implementation of the NAQIA Corporate Plan (2008 – 2012). The relationship between NAQIA and AQIS is valued by PNG because it provides confidence through access to a larger network of professionals.

PAQTS was developed under the PNG-Australia Development Cooperation Strategy 2006 - 2010 and contributes directly to objectives 2 and 3:

- **Sustainable broad-based economic growth and increased productivity** – PAQTS supported NAQIA to strengthen its capabilities to address pest and disease incursions that threaten economic growth and agricultural productivity. An example is the plant disease surveillance training, conducted by NAQIA and AQIS officers, in response to the Quarantine Risk Assessment developed with support from PAQTS.
- **Improved service delivery and stability** – PAQTS supported NAQIA to provide better technical services and provided stability to the technical teams. The institutional and personal relationships between AQIS and NAQIA have been reinforced by PAQTS activities and these form the foundation on which emergency response is built for threats such as Avian Influenza, virulent Newcastle Disease and Coffee Berry Borer.

More recently PNG and Australia have entered in to a Partnership for Development and PAQTS contributes to schedule 4:

- **Improved public sector management** – the purpose of PAQTS was to improve the technical, managerial, strategic and procedural capabilities of NAQIA. Some of these capabilities were strengthened through implementation and are consistent with Focus Area 1 of the schedule (Public Sector Capacity Development and Training) and will contribute to achievement of 2015 outcomes such as increasing number of public servants accredited in core public administration competencies

The relevance of PAQTS could have been greater. Better alignment with the NAQIA Corporate Plan and Business and Operational Plan 2008-2012 would have addressed purpose-level change relating to strategic and managerial capabilities in NAQIA. Some stakeholders perceived that AQIS led selection of activities implemented under PAQTS.

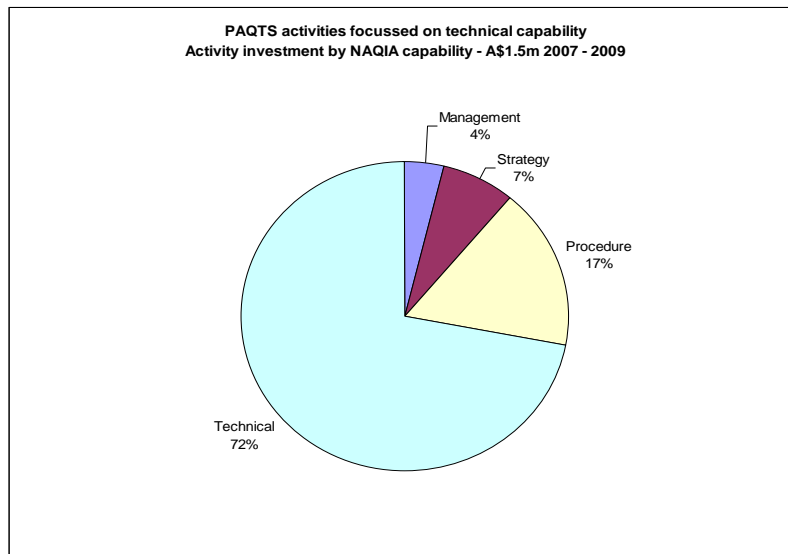
*“We implemented the activities AQIS said we could do....”*

NAQIA Board member

## 2.2 Effectiveness

The objective of PAQTS was to improve the institutional capacity of NAQIA and strengthen strategic technical cooperation between NAQIA and AQIS. Institutional capacity was further defined to be the technical, managerial, strategic and procedural capabilities of NAQIA. The analysis in Chart 2 shows how the PAQTS investment was allocated to activities according to their contribution to each of these capabilities. This analysis shows a strong bias towards development of technical capabilities – a bias that reduced the effectiveness of PAQTS despite the quality of technical activities.

**Chart 2 : PAQTS activities mostly supported technical capabilities**



Source: PAQTS Activity Reports 2007 - 2009

PAQTS effectively delivered outputs that will lead to partial achievement of the five planned outcomes:

- **Strengthened institutional capacity** – PAQTS contributed to improving the technical capabilities of NAQIA. For example more than 70% of the PAQTS budget was invested in technical activities. This is where the key individuals from NAQIA and AQIS leading PAQTS had a common interest. The technical capacity development outputs are of a high standard. Technical capabilities are an essential part of a quarantine system because international trading partners need confidence that a country’s quarantine and inspection system has integrity and is trustworthy. The national *Varroa* surveillance, awareness and training activity NAQIA implemented in 2009 (see Box 1) is an example of the agency demonstrating international good practice technical capabilities. NAQIA developed, implemented, monitored and completed the activity professionally, and engaged with other national agencies (Department of Agriculture and Livestock) and provincial partners (provincial animal health officers) for a national exercise that required sophisticated logistics as well as careful technical preparation. Other activities implemented in plant disease surveillance and sampling demonstrate equal technical competence. However, PAQTS did little to address organisational and human resource capabilities. The best example is the 2007 Capacity Review prepared with PAQTS support, which led to changes in the way NAQIA staffed for its operations. For example 2 IT staff were recruited as a result of the review – and their influence in supporting technical operations is acknowledged by NAQIA.

### Box 1 : National Varroa surveillance, awareness and training

*Varroa* mite is a serious biosecurity risk for the PNG and Australian honeybee industries. To stabilise the current *Varroa* outbreak in PNG it was necessary to determine the distribution of the parasite and to ensure that provincial animal health officers were aware of the *Varroa* threat and skilled in required surveillance techniques.

The Chief Veterinary Officer at NAQIA identified the need and proactively prepared the national *Varroa* surveillance, awareness and training program. The program was financed by PAQTS and implemented in partnership with DAL and provincial animal health staff. Complex logistics included deployment of 13 PNG professionals in 5 teams to randomly selected sites in 35 Districts throughout PNG. Special arrangements were made for Manus to ensure its forecast *Varroa*-free status was preserved. Results were analysed scientifically and led to management responses in the form of internal movement controls of bees, hives and related equipment.

The *Varroa* program is an example of a capable organisation – it demonstrated technical capacity consistent with *international good practice*, and was *organisationally strong* because it was efficiently implemented with whole-of-government and producer partners. The program followed *good practice procedures* and was followed up with *sound communication* and *effective management response*.

The *Varroa* program demonstrates that NAQIA has the capabilities needed for quarantine surveillance, awareness raising and training. A more strategic approach to investing in PNG quarantine would include an annual schedule of such surveillance and awareness programs for priority risks such as Coffee Berry Borer.

- **Improved ability to prevent incursions and address quarantine threats** – the Quarantine Risk Assessment (QRA) developed with PAQTS support established a valuable foundation for strategic and proactive planning of quarantine and inspection investment to prevent incursions in PNG. However, the QRA was not widely communicated and so its usefulness for proactive prevention of incursions is yet to be realised – for example NAQIA officers responsible for managing the highest risk pathways identified in the QRA had not been involved in preparing the assessment and were not aware that the QRA existed. PAQTS also supported several technical activities to develop surveillance capabilities in NAQIA staff and their provincial colleagues to improve detection, monitoring and control of exotic pests and diseases of quarantine concern. For example, the training course in plant pest, disease and weed surveillance, recognition and identification conducted in October 2007. Such activities complement parallel initiatives in the Torres Straight and western border region of PNG supported through the Northern Australia Quarantine Strategy (NAQS).
- **Support international market access and trade** – market access was not a high priority for PAQTS, which was a relevant decision given the relative risks and opportunities of imports and exports for PNG agriculture. PAQTS supported NAQIA to establish the Australian Fumigation Accreditation Scheme (AFAS – see Box 2) and this has established capabilities in NAQIA and the private sector fumigation industry that meet international good practice standards. AFAS greatly increased the capacity of PNG treatment facilities to apply methyl bromide fumigation to cargo. A secondary outcome is an increased awareness in PNG of the safety aspects of applying these treatments. AQIS expects that PNG will experience a significant reduction in the number of interventions on cargo at the Australian border as a result of this scheme.
- **Transfer of knowledge and skills from AQIS staff to their PNG counterparts** – the activities supported by PAQTS enabled AQIS staff to transfer technical knowledge and skills to their PNG counterparts. This was especially successful with senior members of the technical division of NAQIA who engaged as peers in developing and field-testing surveillance, sampling and analytical knowledge skills relevant to PNG. However, very few procedural skills and almost no strategic or managerial knowledge was transferred from AQIS to NAQIA despite the PAQTS design emphasising these needs and the Capacity Review confirming them as priority needs. For example 35 of the 73 recommendations in that review related to organisational and managerial capabilities.

- **Inter-organisational partnership between NAQIA and AQIS** – relationships between senior staff in NAQIA and AQIS were reinforced and maintained by PAQTS. These relationships are a tangible outcome of PAQTS, built on ongoing knowledge-sharing and dialogue between the agencies. Long-term relationships between NAQIA and AQIS are the foundation on which any bilateral emergency response would be built. This has significant value to both countries. For example NAQIA and AQIS staff have a regular monthly teleconference and often exchange email and telephone communications for mutual benefit.

*“We have a comfortable relationship with AQIS.....we can talk informally with them anytime..”*

Senior NAQIA manager

## **Box 2 : Australian Fumigation Accreditation Scheme**

PAQTS supported NAQIA to adopt the Australian Fumigation Accreditation Scheme (AFAS). 28 NAQIA staff and 34 industry stakeholders received training and competency assessment in 2007 and 2008. Sustainability is assured through training 4 PNG trainers and 14 auditors – who have demonstrated their capacity to plan and deliver effective training (75% trainees independently assessed competent by AQIS). Industry stakeholders interviewed for the evaluation continue to implement AFAS-standard fumigation practice. The total cost of PNG AFAS adoption met by PAQTS was A\$215,000 – a modest investment to protect PNG agriculture (around 25% of GDP) and export industries that are critical to rural livelihoods. For example, Coffee is the most important source of cash income in rural communities – providing more than half the rural population with cash income worth a total of A\$27 million/year.

AFAS is an Australian standard for fumigation treatment of risk materials or products exported to Australia. NAQIA and industry stakeholders welcomed the PAQTS support for establishing AFAS in PNG. While implementing AFAS does not necessarily reduce the level of interventions in the export/import pathway, movement of the interventions to the pre-export stage provides a higher level of confidence to quarantine regulatory agencies and facilitates the timely clearance of cargo upon arrival in Australia. As a standard that is being accepted in the Asia region, AFAS also enables PNG to enhance existing trade and secure new regional markets for its agricultural and forestry products.

Prior to implementing AFAS there was minimal regulation of fumigation treatments, and a lack of attention to the safety aspects of applying these treatments in PNG. Similarly, there was no means of measuring the efficacy of applied treatments through audit and verification activities. NAQIA now has the technical and procedural capabilities to apply AFAS to imported cargo and so provide greater confidence in management of quarantine pests entering PNG. The procedural techniques and verification/auditing procedures introduced through AFAS with support from PAQTS are directly transferrable to other quarantine and export inspection activities. As a result NAQIA is now well placed to apply these techniques and procedures to its other regulatory functions.

### ***Early capacity review was a useful trigger for change***

One of the first activities conducted under PAQTS was preparation of a NAQIA capacity review. This identified opportunities for strengthening capabilities and developing capacity – many of which were consistent with the purpose of PAQTS. NAQIA management expressed ownership in this review, although they seem to have been consulted in its preparation rather than actively involved as partners through its implementation. The review seems to have raised understanding of the need for change in NAQIA management, but PAQTS activities did not fully respond to this need.

*“PAQTS really woke us up – especially the 2007 Capacity Review.....but we didn’t do a good job of communicating that upwards so that management would take action....”*

Senior NAQIA manager

In 2008, with support from another AusAID program<sup>5</sup>, NAQIA prepared a Corporate Plan and Business Operational Plan (2008-2012), which built on findings of the Capacity Review and provided a sound basis for strategic allocation of PAQTS resources to develop managerial and strategic capacity. That opportunity was not pursued.

***Quarantine Risk Assessment provided an opportunity for more strategic engagement***

In July 2008 PAQTS delivered a PNG Quarantine Risk Assessment (QRA). This is an important strategic resource for PNG that identifies the risk pathways threatening plant and animal health as well as human pandemics linked to livestock. NAQIA stakeholders in Port Moresby identified the QRA as a valuable output and confirmed ownership in its development. However, NAQIA has not yet marketed the QRA outside Port Moresby or to policy institutions (eg DNPM or DAL) or the private sector, nor has it used the QRA as a resource to advocate for change or additional resources. Some key risks identified in the QRA were addressed with activities implemented by PAQTS. For example AQIS supported NAQIA to develop and market capabilities in fumigation using the Australian Fumigation Accreditation Scheme (AFAS), which is becoming a regional standard for such treatment. There is no evidence that the QRA was systematically used by NAQIA and AQIS to identify priority activities in annual plans prepared subsequent to its release. Despite this, there was evidence from the field that provincial agricultural advisors and officers looked to NAQIA for quarantine risk information and resources.

***“I’d like to know that I had NAQIA there to back me up when I’m on patrol with farmers.....so I can be alert to new threats....”***

Provincial Cash Crops Advisor

***Procedural capabilities were developed but need more work***

17% of the PAQTS budget was allocated to activities with a procedural component. For example PAQTS supported NAQIA to prepare administrative procedures for issuing import permits. However, these do not seem to have been communicated since operations staff at Lae Wharf – representing a high risk quarantine pathway with more than 65% of imports into PNG – were not aware of these procedures and had not seen the document prepared with support from PAQTS. In addition, there is limited evidence that procedural capacity opportunities identified in the 2007 Capacity Review were implemented. Private sector clients of NAQIA consistently identified procedural inefficiencies. Both clients and NAQIA staff perceived that procedural capacity remains weak in NAQIA. There is an opportunity to conduct a review of operational procedures to identify priorities for strengthening operational procedures and increasing their efficiency. One example identified by both NAQIA clients and staff is the need for inspection procedures to support quality assurance for exports. The effort invested in such procedures for the tuna export industry in partnership with the National Fisheries Authority is a good example of the benefits to be gained from review of operational procedures. The need for such a review is especially critical because NAQIA is constrained by a shortage of staff (118 current staff compared with corporate plan requirement of 145) and demand for professionals in PNG is forecast to increase strongly. Use of IT to improve efficiency may help NAQIA address a number of its strategic challenges – something that is identified in the 2008 Corporate Plan but not addressed by PAQTS.

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<sup>5</sup> Advisory Support Facility

***Strategic capabilities are developing but need more work***

The Capacity Review and QRA provide a sound foundation for strategic planning by NAQIA that is complemented by the Corporate Plan and the Business and Operational Plan 2008-2012. Despite this little investment was made in developing the strategic capabilities of NAQIA – around 7% of the activity budget. Few activities under PAQTS reflect the strategic opportunities for change identified in the capacity review or QRA. One example relates to information technology (IT) – at the time of the Capacity Review NAQIA had no IT staff but as a result of the review 2 IT staff were recruited, one funded by SPC. However, IT systems in NAQIA remain weak (for example the National Veterinary Laboratory has only dial-up access to the internet and the agency has no website) and IT strategies identified in the corporate plan have yet to be implemented. AusAID could have facilitated NAQIA and AQIS to re-focus on strategic capabilities through a review process once early outputs showed what was being achieved. It is common for an AusAID program like this to start on an experimental basis but when early results are delivered have a review that helps partners focus on delivering program outcomes and purpose.

***Managerial capabilities were not addressed effectively by PAQTS***

Less than 5% of PAQTS investment was used to develop managerial capabilities in NAQIA. The five PAQTS outcomes included strengthening organisational capabilities in NAQIA – something that the 2007 Capacity Review reaffirmed as a priority need. For example 35 of the 73 recommendations in that review related to organisational and managerial capabilities – including staffing and organisational structure, client service and public awareness as well as working with other agencies. Equally, many of the capacity constraints identified by NAQIA and its clients have organisational and/or managerial solutions. For example an effective monitoring system to support evidence-based management would highlight opportunities for increased efficiency – through use of IT or refined procedures.

A key managerial capability is communication with stakeholders. A clear function of NAQIA set out in the NAQIA Act 1997 is:

*Section 5(m) to provide quarantine and inspection information and services to individuals, agencies and other organizations within the country and overseas in respect of animals and plants.*

However, the predominant means used by NAQIA for communicating quarantine information to clients, stakeholders and other organisations is by way of import permits. While it is appropriate to include all relevant quarantine information on import permits this method of communicating quarantine requirements is restrictive and does not necessarily reach all those with an interest in these requirements and does not include broader quarantine information. AQIS has highly developed communication capabilities and these could have been used to strengthen the same in NAQIA through PAQTS.

The lack of focus on strategic and managerial capabilities is a lost opportunity under PAQTS. Comparison with similar organisations in PNG, such as Customs, NARI and the Civil Aviation Authority, show that strong strategic and managerial capabilities increase the influence of an organisation and its ability to attract Development Budget and other resources. For example, PNG Customs and NARI received additional funding in the 2010 Budget released November 18, but NAQIA received no increase at all. The K20 million allocated to managing the incursion of Cocoa Pod Borer in that budget is allocated to a Committee on which NAQIA has a consultative rather than a lead role.

### ***A strategic focus would enhance proactive preparation for quarantine threats***

The QRA identified quarantine pathways and threats to PNG – a foundation for strategic planning and proactive efforts to prevent incursions. The role of provincial DAL staff is critical in engaging with farmers and being the eyes and ears on the ground that inform early warning and quick response systems. PAQTS activities that trained provincial officers were effective and highly valued by participants – the resulting relationships with NAQIA technical specialists and awareness of key threats such as Coffee Berry Borer were frequently raised positively.

***“It is important that we build our defence now, before a problem comes. We have to do that now with NAQIA help.”***

Provincial Agricultural Officer

While the Quarantine Risk Assessment identified a number of pests and diseases for which further assessment may be necessary, the threats posed by the majority of these pests have yet to be fully qualified and prioritised, which would allow contingency plans to be developed for the highest risk pests. There appears to be some confusion in PNG on the roles and responsibilities of developing contingency plans and only a small degree of industry biosecurity planning has been undertaken to date. For example, the coffee industry has developed a contingency plan/strategy for the anticipated arrival of Coffee Berry Borer in PNG but those stakeholders perceived that this had limited input from NAQIA.

PAQTS could have built on this foundation to support strategic capabilities in NAQIA through development of pest risk analyses and proactive threat responses with provincial stakeholders. Gazetting trained provincial staff as officers under the NAQIA regulation provides a strategic biosecurity resource for PNG.

## **2.3 Efficiency**

Overall the management of PAQTS resulted in efficient use of resources. Twinning is more cost effective than long-term technical assistance as a capacity development modality. However, more outcomes could have been achieved for the same inputs if the development needs of NAQIA had driven the selection of activities to be implemented by PAQTS. Such an approach would have better addressed sustainability risks and aligned more efficiently with the NAQIA Corporate as well as Business and Operational plans.

Comparing inputs and outputs for most activities suggests that overall PAQTS was implemented efficiently. Comparing outputs with the purpose of PAQTS suggests that technical capabilities were effectively strengthened as were some procedural capabilities. However, opportunities remain to strengthen strategic and managerial capabilities in NAQIA and it is these capabilities that are needed for NAQIA to become a sustainable organisation.

### ***Twinning was an efficient way to deliver PAQTS***

For the modest investment made in PAQTS the technical and procedural outputs have been useful for Australia and PNG. AQIS was the appropriate twinning partner – more so than a state agency – given the similar mandates and societal responsibilities shared by NAQIA and AQIS. Management of both parties were clearly committed to the scheme, although for different reasons. The attitudes and values that govern the NAQIA-AQIS relationship can be characterised as including mutual respect, honesty, professionalism, recognition and valuing of differences – all good international practice for twinning schemes. Staff that AQIS fielded as advisers had a good blend of technical and interpersonal skills – an important requirement for sustainable relations that both sides identified during the evaluation. Better focus on



development needs of NAQIA would have included a wider range of professionals from AQIS – for example those with strategic planning, organisational management, communication and information management skills. Since mid-2009, AQIS has participated in a restructure of DAFF and so senior biosecurity officers, such as the Australian Chief Veterinary Officer and the Chief Plant Protection Officer, and their staff have more capacity to support strategic planning, organisational management and information management needs in NAQIA for the future.

### ***Twinning was relevant for capacity development***

Twinning was a relevant way of developing capacity – very different from long-term advisers and more focussed on long-term relationships. As further detailed in Box 3 and Annex 2, PAQTS demonstrated many of the strengths that development literature identifies in twinning schemes, including<sup>67</sup>:

- combining training (through attachments, study tours, exchanges etc) with advisory support;
- offering flexible work plans, adaptability to unpredicted factors, and long term cooperation;
- encouraging immediate acceptance of the supplier by the recipient; prospects for collegiality arising from organisational similarities, and easy, effective interaction;
- offering psychological effects (confidence, trust, empathy) to both parties;
- the potential for the emergence of a more equal partnership and a two way exchange relationship; and
- interaction among a wider range of individuals.

### **Box 3 : Success factors for effective twinning**

PAQTS is an example of effective twinning. International experience suggests that twinning schemes are effective if they commence with analysis of the recipient agency's needs and use a twinning partner that shares similar mandates and societal responsibilities. PAQTS met these criteria with the early Capacity Review and twinning of NAQIA with AQIS. Other success factors which PAQTS met include support from top management of both agencies and commitment from all people involved through attitudes of mutual respect, honesty, professionalism and recognition. Additionally, both NAQIA and AQIS saw benefits from PAQTS for their own functions. PAQTS used flexible work plans and diverse forms of activity to ensure tailored solutions to the needs of NAQIA and AQIS. Agreed activities were implemented with professional and coordinated operational practices by both agencies. However, PAQTS would have done better if participating AQIS staff had a better understanding of organisational capacity development – especially for managerial and strategic capabilities. More active support from AusAID may have assisted with this. In addition, more clearly defined expectations to ensure the needs of NAQIA and PNG were paramount would have resulted in additional benefits from PAQTS.

### ***AQIS could have increased efficiency***

The cost norms used by AQIS were generous and not subject to competition. In addition staff from the PNG partner were treated differently from their Australian counterparts. For example salary costs relating to inputs by AQIS staff were funded by PAQTS but those of NAQIA staff were not. At the same time AQIS staff flew to PNG business class and NAQIA staff flew to Australia economy class – a small but symbolic difference that undermines the principles of twinning and partnership. In a twinning scheme such disparity should be avoided to ensure a perception of true partnership.

It is appropriate for AQIS staff to have their salary costs reimbursed for time allocated to PAQTS – however, the amount of time needs to be competitive to ensure efficient use of AusAID resources and maximum allocation of benefits to PNG. As a quick case study,

<sup>6</sup> Jones, ML and Blunt, P (1999) Twinning as a method of sustainable institutional capacity building. *Public Administration and Development* 19(4)

<sup>7</sup> Ouchi, F. 2004. Twinning as a method for institutional development: A desk review. World Bank Institute Evaluation Studies

consider the Quarantine Risk Assessment – a 180-page document compiled from meta-analysis of existing Australian, PNG and international information on quarantine risks to PNG. Preparation of the document and associated training in Australia and PNG cost A\$234,000. This included a total of 52 person weeks of inputs delivered by 4 AQIS staff plus one consultant for 20 days. Whilst the unit costs charged for staff were realistic (actual salary plus on-costs) the time allocation was generous (for comparison a recent report of similar length and complexity was commissioned by AusAID using 34 days consultant inputs or 6.8 person weeks!). A more efficient approach would have been to have one principal author with short inputs from other specialists for engagement with NAQIA, peer review and technical detail.

## 2.4 Impact

The impact of changes attributable to PAQTS was evaluated for NAQIA capacity to operate as an effective organisation and against the 5 PAQTS outcomes. The evaluation of impact recognises that PAQTS is a short program – 3 years – but builds on a longer period of relationship building between NAQIA and AQIS.

### 2.4.1 NAQIA as an effective organisation

Impact was evaluated against perceived changes in NAQIA capacity to operate as an effective organisation, using five core capability measures<sup>8</sup> that relate to the framework set out in Chart 1:

- **NAQIA capability to commit and engage** – industry stakeholders and government partners perceive that NAQIA has become more engaged during the past few years. Much of this change was attributed to the Board appointed in 2003 and its focus on shifting the agency from a public sector to a corporate culture – for example the financial standing of the agency is much more secure now. PAQTS has given NAQIA staff more confidence to commit and engage. This is especially clear in technical staff responsible for animal health whose capacity to commit and engage has been developed through PAQTS activities such as the *Varroa* surveillance and Animal Health surveillance training. NAQIA staff effectively engaged with AQIS to change the response proposed by AQIS for *Varroa* infections. A large amount of budgeted funds were allocated to chemical control of *Varroa*, however NAQIA convinced AQIS that more research on the mite and its effects were required prior to the use of chemical control. This decision was taken in light of the importance of the organic status of PNG honey production. Despite some successes, stakeholders identified the capability to commit and engage as one that needed more effort – for example NAQIA should engage proactively in response to threats such as Coffee Berry Borer and take the lead in responding to this threat in PNG. Staff shortages partly explain why this need remains, but there is also an opportunity to further strengthen the capacity of NAQIA staff to commit and engage to meet their regulated mandate.
- **NAQIA capability to carry out technical, service delivery and logistical tasks** – industry stakeholders perceive NAQIA to be technically and logistically capable. The leaders of the technical divisions are highly regarded in PNG and regionally – for example the senior animal health and plant protection technical staff are called on to support South Pacific Commission activities in other pacific countries. NAQIA demonstrates strengths in responding to incursions related to animal health. In late 2006 virulent Newcastle disease was detected in chickens in East New Britain Province. Following surveillance

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<sup>8</sup> Baser, H and Morgan, P (2008) Capacity, change and performance. Discussion Paper 59B. European Centre for Development Policy Management. The Netherlands.

and incursion response training by AQIS in early 2007 NAQIA coordinated and led an eradication program in the area. The program was successful, both in eradicating the disease and in maintaining good relations with affected families – demonstrating sound technical, service delivery, cultural awareness and logistical capacity. In addition, NAQIA conducted scenario testing as part of its preparation for possible incursions before PAQTS – including exercises for coffee berry borer and cocoa pod borer. PAQTS activities also contributed to these capabilities by giving some control for design and logistics – for example in the *Varroa* surveillance and AFAS activities. Service delivery capabilities are also seen to be improving, although this is less attributable to PAQTS. However, there are signs that operational staff are more confident in service delivery and make sound decisions when judgment is called for as a result of their participation in PAQTS training. For example, NAQIA responded to a decline in AFAS fumigation standards identified through auditing contractors by instigating an increased monitoring regime whereby NAQIA staff are present at the beginning and end of each fumigation treatment. This monitoring regime will continue until confidence in the application of treatments has again increased to an acceptable level. Similarly, a senior agribusiness manager interviewed by the evaluation praised the NAQIA Operations Manager at Lae Wharf for his pragmatic response to a recent incident, which required a quick decision informed by a confident understanding of the technical risks, the operational options and the appropriate service-delivery decision.

#### **Box 4 : Differentiating between change and transition**

PAQTS is a change management program using twinning to enable change through capacity development. The purpose was to transition NAQIA to be an effective organisation with strengthened management and strategic capabilities as well as sound technical and procedural capabilities. Strengthening capacity in NAQIA requires changes in the way functions are done as well as a transition in the way NAQIA staff approach their work.

**Change is external to the individual** – for PAQTS this concerns the different policies, procedures and management capabilities needed by NAQIA to discharge its mandate efficiently and effectively.

**Transition is internal to the individual** – for PAQTS this relates to the psychological reorientation that NAQIA staff have to go through before any change can be embedded.

A change management process must carefully blend activities to address both external and internal processes to overcome blockages to change. There is ample evidence that PAQTS effectively supported transition in some NAQIA staff. However, there is limited evidence that PAQTS supported change in NAQIA.

- **NAQIA capability to relate and to attract resources and support** – the agency has a limited profile at national and provincial levels. Major industry groups such as private sector agribusiness and commodity agencies know of NAQIA but express concerns about its staff shortages and the impact of that on the agency's capacity to engage with influencers and attract resources. For example in the 2010 Budget NAQIA received PGK1.5m out of a requested PGK11m from the development budget and was allocated the same recurrent budget as it received in 2009. For comparison, Customs received increased recurrent and development budget allocations. At the same time NAQIA did not apply for small grants administered by ARDSF – perhaps because the priority afforded it through that facility was not communicated to NAQIA by ARDSF management. Proposed PAQTS activities that could have impacted on the capability to relate and influence, for example development of a NAQIA branding strategy, were deferred and more direct support to develop these capabilities was not considered by AQIS.
- **NAQIA capability to adapt and self-renew** – the agency is changing from a public sector to a corporate culture. The change process started with the 2003 Board and will continue through the term of the next Board, due to be appointed in May 2010. The

adaptation and self-renewal process is being driven by NAQIA itself, and the Board has a clear set of capacity development needs that are set out in the Corporate Plan and Business and Operational Plans 2008-2012. Box 4 summarises the change management issues that the Board is dealing with and that PAQTS could have more actively supported. One of those issues is increased staff numbers and the agency has proactively engaged with University of Technology Lae and Vudal University to attract under-graduate interns for work placements in their final year. Some of these students are attracted to join NAQIA after graduation and others choose to work in agribusiness where their awareness of NAQIA is useful. Another example of the capacity of NAQIA to adapt and self-renew is its application of technical, procedural and regulatory oversight skills acquired from the AFAS activities under PAQTS to other quarantine systems. NAQIA is currently investigating opportunities to outsource airline waste destruction activities at Port Moresby airport. The framework for AFAS would be readily adaptable to a system of accrediting, monitoring and auditing airline waste destruction services provided by a third party. These examples show that NAQIA has the potential to adapt and self-renew. However, PAQTS did not actively respond to the adaptation and self-renewal needs of NAQIA and as a result the scheme had little impact on those capabilities, nor were they targeted at addressing those needs. This is a lost opportunity since the mandate of PAQTS included developing managerial and strategic capabilities that normally include adaptation and self-renewal.

- **NAQIA capability to balance diversity and coherence** – PAQTS supported development of coherent approaches to quarantine risk assessment, surveillance and technical engagement with provincial agriculture officers. For example, the surveillance training activities supported by PAQTS developed coherent technical capabilities in animal health and plant protection staff. Some procedural capabilities were also developed, for example with import permits, but the impact of these has been limited because PAQTS outputs were not integrated into NAQIA procedures and communicated throughout the agency. The support for developing and communicating an operational manual requested by NAQIA – consistent with needs identified in the 2007 Capacity Review – was not addressed by PAQTS even though this was clearly within the mandate of the scheme.

#### 2.4.2 Impact assessment of PAQTS outcomes

Impact was also evaluated against the five PAQTS outcomes:

- **Outcome 1: Strengthened institutional capacity of NAQIA** – PAQTS impacted positively on the technical capabilities of NAQIA, especially enabling the technical leaders to confidently implement their technical functions in PNG and the region. There is ample evidence of the technical impact of PAQTS and the confidence that the institutional relationship between NAQIA and AQIS gives its management team. There is little evidence that PAQTS impacted the organisational or human resource management capabilities of NAQIA. PAQTS training certainly improved the capabilities of existing senior staff to conduct training. Future technical training – of new NAQIA staff as well as of provincial extension and animal/plant health officers – can be undertaken by NAQIA without AQIS support. However, the capacity of NAQIA to influence and lead was not impacted by PAQTS. For example, the DAL Deputy Secretary, who also represents the Secretary as a NAQIA Board Member, commented that when there is a relevant quarantine issue, a coordinating committee is formed with relevant agencies such as DAL, NAQIA, Provincial Governments, Commodity Boards, etc. For such committees, DAL or other agencies have taken the lead. NAQIA has either been invited and/or participated as an observer. DAL indicated they would like NAQIA to take a more proactive leadership role on quarantine issues.

- **Outcome 2: Improved ability to prevent incursions** – PAQTS impacted the ability of the technical and operational staff in NAQIA to conduct surveillance, prepare samples for analysis and engage with provincial agriculture officers. More than half the PAQTS budget was allocated to activities that contributed to this outcome. Plant protection and animal health surveillance training developed individual and organisational capabilities to detect, monitor and control exotic pests and diseases of quarantine concern. However, PAQTS had no apparent impact on the strategic and managerial capabilities of NAQIA needed to prevent incursions through proactive communication, awareness raising, influence or exercises. For example, CIC, FPDA and NARI expressed concern that NAQIA was not proactively leading efforts to prevent incursions of exotic pests and diseases of quarantine concern to them such as Coffee Berry Borer, Potato Cyst Nematode and *Fusarium* wilt respectively. Activities scheduled for the 2009-2010 year are planned to address emergency management capabilities.
- **Outcome 3: Improved capacity to support international market access and trade** – few PAQTS activities were directed to improve PNG quarantine capacity to support international market access and trade. AFAS was a start but this had no strategic focus and did not engage other stakeholders such as PNG Department of Trade and Industry or export commodity organisations such as CIC and CCI. Support for quality assurance of exports is limited – and driven by other agencies. For example quality control for tuna exports is done at the NAQIA Veterinary Laboratory but the investment and initiative is from the National Fisheries Authority. A strategic response to trade development could have included a focus on markets that are less bio-secure than Australia and New Zealand – for example fresh horticultural produce in Singapore, Hong Kong and Brunei. Agricultural trade data for PNG since 2007 are very limited and do not indicate changes that could be attributed to PAQTS.
- **Outcome 4: Knowledge and skills transfer from AQIS to NAQIA** – the activities conducted through PAQTS allowed technical knowledge and skills to transfer from AQIS to NAQIA. Examples include the *Varroa*, AFAS and surveillance activities detailed already. However, strategic, managerial, organisational, procedural and information technology knowledge and skills were not transferred even though they were identified as a high priority in the 2007 Capacity Review and the NAQIA Corporate Plan and Business and Operational Plan 2008-2012. As a result PAQTS did not impact on managerial or strategic capabilities in NAQIA. Given the increased interest in managerial and strategic matters by senior AQIS officers and their staff, it is likely that the on-going relationship between the two organisations will include transfer of some of these skills in the future.
- **Outcome 5: Establishment of an inter-organisational partnership** – PAQTS enabled the two agencies to continue and reinforce the established relationship that is of value to both countries. PAQTS resulted in a formal schedule of annual bilateral meetings as well as monthly operational meetings. In addition, the frequency of contact between technical staff increased to regular weekly communications. There is ongoing knowledge-sharing and dialogue between the agencies, albeit at a technical level rather than at a strategic or managerial level. The impact of this relationship is clear from its potential as the foundation on which any emergency response to quarantine risks to either country would be built.

## 2.5 Sustainability

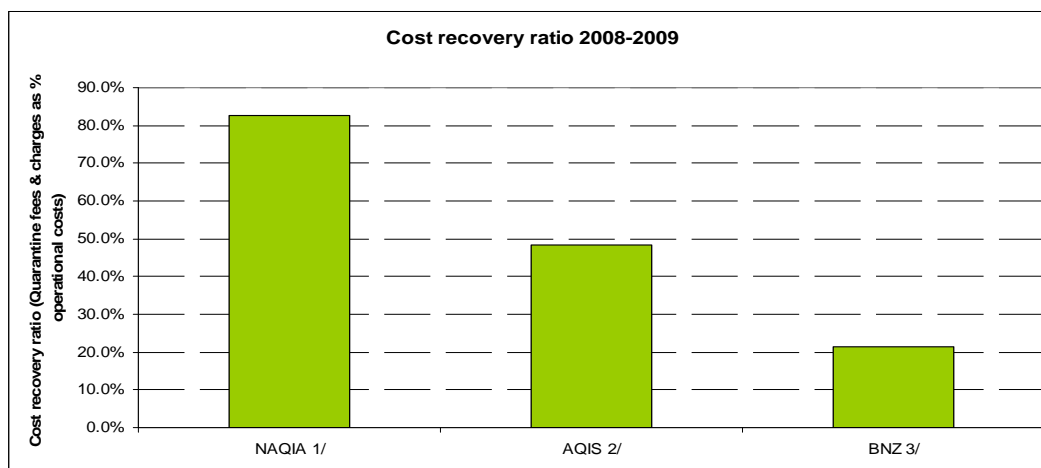
Institutional and biosecurity benefits resulting from PAQTS will be sustainable if they continue after the completion of the scheme in 2010. Use of strengthened PNG systems, ownership of activities by NAQIA and a considered phase-out strategy are components of a sustainable approach. Of the 5 PAQTS outcomes sustainability is most likely for the relationship between NAQIA and AQIS (Outcome 5) and the improved ability of NAQIA to

detect, monitor and control exotic pests and diseases (some of Outcome 3). Annex 1 provides an assessment of sustainability based on detailed analysis of PNG ability to prevent incursions and to detect, monitor and control pests and diseases of quarantine concern.

***Refined procedures could increase sustainability***

Demand for skilled professionals in PNG exceeds supply and in this environment NAQIA finds it hard to recruit and retain a full complement of staff. Changed procedural capabilities – to increase efficiency – and strengthened strategic capabilities – to focus on the highest risk quarantine pathways – are two ways to mitigate this sustainability risk. For example, NAQIA currently relies on manual screening of shipping manifests and airway bills to determine which goods are subject to quarantine examination. This is a time-consuming process and places a significant proportion of the responsibility for identifying imported risk goods upon NAQIA. An opportunity exists to develop an interface to the customs entry system that will automatically identify (through profiling and using the QRA developed through PAQTS) risk goods entering Papua New Guinea and flag these imports to NAQIA for further screening to determine whether they will be subject to quarantine examination. Such a system could also be used as a repository for electronically storing all information relating to a quarantine entry for easy access and retrieval. AQIS uses such a system and PAQTS was an ideal vehicle to explore this opportunity with NAQIA.

**Chart 3 : NAQIA has a relatively strong cost recovery capacity**



- 1/ NAQIA Budget 2009 (Source: NAQIA Business and Operational Plan 2008 - 2012, p24)
- 2/ AQIS Budget 2008 (Source: AQIS Annual Report 2008-2009 pp368 - 374) FX PGK1 = AUD0.4
- 3/ BMS Budget 2008 (Source: MAFF Annual Report 2008-2009 pp50-58) FX PGK1 = NZD0.5

***The technical focus could have better reflected PNG agricultural priorities***

More than 80% of the PNG population is rural, relying on subsistence agriculture for food. Most food energy in rural areas comes from plants (eg root crops, bananas, sago) with animal products from the land contributing just 5% energy and 13% protein<sup>9</sup>. When cash is needed – for example to pay school fees or health clinic costs – rural households often rely on cash crops such as coffee. More than 50% of the PNG population rely on coffee as a major source of cash income, generating on average PGK47/person/year from this source<sup>9</sup>. External threats to fresh produce (for example Banana Bunchy Top Virus or Potato Cyst Nematode on seed potato from some parts of Australia) and to cash crops (for example Coffee Berry Borer) were not a focus of PAQTS activities, even though they threaten core agricultural systems and

<sup>9</sup> Bourke, R.M. and Harwood, T. (eds) (2009). Food and Agriculture in Papua New Guinea. Research School of Pacific and Asian Studies, Australian National University, Canberra.

livelihoods that would have a severe impact on PNG. Potato Cyst Nematode is a case study set out in Box 5 that illustrates the lost opportunity.

### **Box 5 : Capacity development opportunities that meet PNG needs**

The Fresh Produce Development Authority (FPDA) emphasised to the ICR team that Potato Late Blight had a significant impact in PNG after the 2003 incursion. An emerging threat to Irish potato production in PNG identified by FPDA is Potato Cyst Nematode – a pest that currently does not occur in PNG. FPDA raised this threat with NAQIA and the pest is included in the Quarantine Risk Assessment.

Minutes of PAQTS monthly meetings between NAQIA and AQIS show that on several occasions the Managing Director of NAQIA raised concerns about the threat posed by Potato Cyst Nematode. AQIS/PAQTS did not respond to the Managing Director's concern. This was an ideal opportunity for PAQTS to develop NAQIA strategic and managerial capacity to prepare and respond to import risk assessments and pest risk analyses. An activity focussed on developing a pest risk assessment for Potato Cyst Nematode would complement the QRA. If the risk is strategically significant to PNG – as FPDA believes – then phytosanitary measures could be modified or developed to manage the risk – especially relating to seed potato imports from Australia which dominate PNG seed potato sources. In this way PAQTS would develop NAQIA capacity and contribute to meeting PNG development needs.

Other threats to priority agricultural systems were covered generally in plant disease surveillance training but targeted activities to support strategic and proactive preparation to prevent incursions were not developed.

#### ***A focus on PNG priority development needs would have increased sustainability***

One of the risks of a twinning relationship is that partners have unequal influence over what is implemented. Ideally NAQIA would have articulated a clear idea of what it wanted from the twinning relationship and AQIS would have clearly set out what it was able and willing to offer. This level of transparency may not have been achieved at the beginning of PAQTS, leading to some activities that did not meet priority NAQIA needs - perhaps because NAQIA may not have had the capacity to assert its priorities in the partnership. This seems, for example, to be why PAQTS focused on activities to develop technical rather than procedural, strategic and managerial capabilities. Greater sustainability would have been achieved if needs identified in the 2007 Capacity Review relating to staffing and organisational structure, client service and public awareness as well as working with other organisations had been addressed in addition to technical matters.

#### ***Prevention of incursion is the most efficient quarantine investment***

The lack of preparedness planning for incursions of high risk pests may undermine Papua New Guinea's ability to control and eradicate any such incursion if it does occur. A lack of readiness can severely slow down any attempt to manage an incursion as it takes considerable time and resources to gather the necessary information about a particular pest, and to use this information to design delimiting surveys, control programs and eradication procedures based on local conditions. The extra time taken to respond to an incursion provides more opportunity for the pest to spread, thus making control and eradication more difficult.

The evidence from PAQTS is that NAQIA and AQIS work well together when reacting to an incursion. Recent examples include Potato Late Blight (2003), virulent Newcastle Disease in East New Britain (2007), and the national *Varroa* mite delimitation survey (2009). However, NAQIA has not demonstrated a systematic and strategic approach to proactive management of threats of importance to plants in PNG agriculture. For example the response to the threat posed by Coffee Berry Borer – perhaps the greatest single threat to rural livelihoods and agricultural exports in PNG – has been led by the Coffee Industry Corporation and DAL, which attracted special project funds from the national development budget. NAQIA participates in the related committee but does not lead the effort and was not the organisation

that influenced budget allocations. To more sustainably manage quarantine threats to PNG NAQIA needs to strengthen its strategic and managerial capabilities so that it can influence and lead proactive management of such threats. NAQIA has exposure to how this is done – it collaborates with AQIS in proactive, quarterly surveillance, using sentinel flocks along the PNG-Indonesia border – for diseases of mutual importance such as Avian Influenza and virulent Newcastle Disease, but this is paid for and organised by AQIS through the Northern Australia Quarantine Strategy.

### ***Sustainability concerns with AFAS were not addressed***

Implementation of AFAS in PNG under PAQTS was successful but sustainability concerns have not been addressed as part of a strategic response to the scheme – there is potential that AFAS treatments will become standard practice without further consideration being given to the source of infestation on cargo. This may result in “over” regulation of exported cargo, which would be a move away from the Montreal Protocol on Substances that Deplete the Ozone Layer. An opportunity exists for NAQIA to work with export industries to analyse current export pathways and identify the critical points where cargo and containers are being infested and then develop measures to prevent infestation at these critical points. This would lead to more sustainable use of AFAS, potentially saving exporters time and money and giving further confidence to trading partners that cargo from Papua New Guinea presents a low quarantine risk.

## **2.6 Gender equality**

PAQTS did not explicitly advance gender equality or promote women. Considering the four dimensions of gender equality:

- **Access** – women had access to PAQTS training activities but broader access opportunities were not taken. For example, a Provincial Cash Crops Officer emphasised the importance of understanding the gender roles associated with certain crops when developing quarantine risk assessments and threat response plans. There is no evidence that gender considerations were integrated into outputs from PAQTS, thus reducing the effectiveness of quarantine responses available to women farmers.
- **Decision-making** – there is no evidence that women from NAQIA were involved in decision making with respect to PAQTS activities. Some senior women were selected for training in isolated examples, but there was no proactive selection of women participants to contribute to gender equality within NAQIA. For example, AQIS could have worked with NAQIA management to make sure that women participated in the decision-making group preparing annual plans for PAQTS activities.
- **Women’s rights** – no PAQTS activities were designed to deliver women’s rights.
- **Capacity development** – neither NAQIA nor AQIS recorded gender-disaggregated data for participants in training and other capacity development activities. Estimates from AQIS are that 25% of participants were women, but evidence from output reports shows that this was highly variable and not proactively developed as part of PAQTS.

Basic monitoring data collected by NAQIA and AQIS was not gender disaggregated so it is not possible to quantitatively evaluate equality of training opportunities. Because roles in PNG agriculture can be gender specific (for example there are male crops such as bananas and female crops such as leaf vegetables or peanuts) and some cash crops roles tend to be gender specific, there are opportunities for a strategic response by NAQIA. For example the Provincial Department of Agriculture and Livestock in Eastern Highlands has proactively established a “gender office” for women in agriculture with 2 provincial staff and 6 district staff – all women agriculturalists. They see opportunities for targeted communication of quarantine surveillance information to women, who they believe are most observant and well



equipped to operate an early warning system. Such a system works when women farmers have a network of women agricultural officers with whom they relate – a “women’s agriculture network” as they call it in Eastern Highlands. This is an existing resource that NAQIA could use. For example strategically focused information material using photographs of key quarantine threats could be targeted at relevant gender-specific audiences. A good example is the Coffee Berry Border posters developed by CIC and DAL with support from South Pacific Commission.

## 2.7 Monitoring and evaluation

PAQTS had a limited monitoring system and did not use evaluations to inform management of the scheme. The monitoring that was conducted focused on inputs and activities – it did not effectively measure progress towards meeting PAQTS outcomes. Of the monitoring data that was collected, none was gender disaggregated and there is no evidence of data being analysed to provide information for management of PAQTS. The limited range of quantitative performance information restricted the ability of the ICR to provide quantitative examples to illustrate lessons learned from the evaluation.

A Reporting, Monitoring and Evaluation Framework (RMEF) was prepared by AQIS in September 2007. NAQIA was consulted through the regular monthly meeting (by telephone or in person) to inform the framework but was not engaged as a full partner in its development – that is development of the framework was not done together and used as a learning experience to develop managerial and strategic as well as procedural capabilities in NAQIA. The agenda proposed in the RMEF for the monthly meetings between NAQIA and AQIS was sensible. Evidence from the minutes of the monthly meetings shows that progress of activities was monitored qualitatively by discussion and activity management was also discussed. The meetings were also used for discussion of bilateral quarantine issues – further evidence of the quality of the working relationship between NAQIA and AQIS. As an example, analysis of minutes from a sample of 9 meetings between August 2007 and August 2009 showed that 55% of agenda items related to PAQTS monitoring and management; 17% to technical matters relating to PAQTS and 28% to bilateral biosecurity matters outside PAQTS. This suggests a balanced approach to these monthly meetings and the quality of the relationship between NAQIA and AQIS – consistent with Outcome 5 of the scheme.

### *Limited scope of Reporting, Monitoring and Evaluation Framework*

The Reporting, Monitoring and Evaluation Framework (RMEF) prepared by AQIS in September 2007 focused on inputs and activities – it did not effectively measure progress towards meeting PAQTS outcomes. For example the reporting and monitoring activities set out in the RMEF included:

- development of annual work plans;
- monthly meetings between NAQIA and AQIS;
- activity reports produced by AQIS for each completed PAQTS activity;
- annual high-level meeting between NAQIA and AQIS;
- mid-term report of PAQTS;
- review of NAQIA capacity following PAQTS (proposed for November 2009); and
- activity completion report for PAQTS.

The framework was not developed in partnership with NAQIA and did not include monitoring activities that could also be used to develop the managerial capabilities of NAQIA. For example, an annual survey of customs agents or fumigation service providers to identify their perceptions of NAQIA and awareness of quarantine issues would have provided

useful monitoring at output and outcome level as well as building NAQIA capabilities in client responsiveness.

Activity reports for each PAQTS activity were well prepared by AQIS – thoroughly describing inputs, activities and some outputs. However, no analysis or lessons learned were added to support management and there is no evidence that these reports were developed with NAQIA or used to inform subsequent annual plans. A more sustainable approach would have been to start with jointly prepared activity reports in 2007/08 with transition through 2008/09 towards NAQIA leading the activity reporting by 2009/10. NAQIA clearly has this capability – the report of the Varroa surveillance activity prepared by the NAQIA Chief Veterinary Officer is a good example. Sustainable twinning practice suggests that more effort in building NAQIA ownership of the monitoring process would have added value to PAQTS, especially achievement of Outcomes 1 and 4.

The mid-term report was a two-page document that reported on inputs (budget, people) and activities. The conclusion of the mid-term report highlighted the need for more development of organisational, managerial and strategic capabilities but this lesson learned did not influence the activities in subsequent annual plans.

***No evaluations were undertaken***

Evaluation activities set out in the RMEF are responses from NAQIA resulting from PAQTS outputs rather than evaluations. However, the proposed responses are practical and would have made a sensible inclusion to activity plans if they had been developed in partnership with NAQIA. The delays in NAQIA implementing these responses, as identified in the mid-term report of August 2008, may be because of a lack of ownership as much as a shortage of staff. The RMEF could have included a joint evaluation of NAQIA operational capacity (relating to Outcomes 1, 3 and 4) and/or evaluation of stakeholder awareness and quarantine preparedness (relating to Outcome 2). This would have informed PAQTS and built NAQIA management and strategic capabilities.

The RMEF proposed a questionnaire for use by participants in training courses to collect feedback. This was to have been developed by NAQIA and AQIS but there is no evidence that the questionnaire was developed or used and no evidence that any data relating to participation perception of the quality or usefulness of training courses was collected. Basic monitoring data was not gender disaggregated so it is not possible to evaluate equality of training opportunities.

The RMEF proposed a review of NAQIA capacity following implementation of PAQTS activities as part of the monitoring framework, with November 2009 suggested as the completion date. This is a sensible proposal that suits an evaluation approach. There is no evidence that this proposed review is planned or can be implemented by the partners. Since PAQTS is extended to June 2010 there remains an opportunity for this evaluation of PAQTS capacity to be done as a joint evaluation between NAQIA and AQIS. The work would need to be informed by a professional evaluator.

***Little evidence of systematic use of monitoring data***

Review of monthly monitoring meeting minutes reveals little evidence of systematic use of monitoring data to support management or inform priority setting decisions. Input monitoring was clearly done by AQIS and it reported to AusAID in compliance with the ROU, but there is no evidence that budgets and variance from plan were systematically discussed with NAQIA as part of a co-management partnership.

## **2.8 Analysis and learning**

PAQTS was informed by sound technical analysis from AQIS and NAQIA – the 2007 Capacity Review and the Quarantine Risk Assessment are good examples of the analysis used in PAQTS. The technical focus was certainly sensible for Australia (for example complementing NAQS) and was consistent with the needs of PNG identified in the QRA. The organisational analysis in the 2007 Capacity Review was a sound starting point but lessons learned from this and subsequent monitoring activities (for example the brief mid-term report) were not used to support management decisions or inform priorities in subsequent annual plans. There is little evidence that implementation of PAQTS was informed by continuous learning.

### ***There were ideal opportunities for communication and feedback***

Many stakeholders in the ICR – from national agencies, provincial agencies, private sector and parastatals – perceived that NAQIA would be stronger if it communicated more openly to raise awareness of quarantine risks and its activities to prevent incursions. For example, Customs has a monthly dialogue with the Customs Brokers Association to engage with industry stakeholders and create an opportunity for communication and feedback. Customs uses the dialogue as a learning opportunity – to receive feedback on its services and performance, to understand changing industry needs and to test if proposed responses to these needs are likely to be appreciated by stakeholders.

NAQIA does not host such dialogue and when stakeholders gave examples of engagement with NAQIA it was always at their invitation and through their initiative rather than originating from NAQIA. This needs was identified in the 2007 Capacity Review but was not addressed through PAQTS activities. Provincial stakeholders such as provincial agriculture officers complained that after supporting NAQIA to conduct field surveillance, farmers received no feedback. There were ideal opportunities for communication and feedback with NAQIA stakeholders through PAQTS – for example a public launch of the QRA could have been implemented or industry stakeholders could have been proactively engaged to communicate high risk pathways. Strategic and managerial capabilities of an organisation include the capacity to analyse and learn from experience. Opportunities were not taken to use monitoring, evaluation and analysis of PAQTS activities to strengthen learning capacity in NAQIA. Such lost opportunities result in less sustainable and less effective outcomes from the scheme.

### 3 Evaluation criteria ratings

The ratings<sup>10</sup> against the evaluation criteria are presented in Chart 4. Impact was not rated because PAQTS has operated for only a short time. If the proposed Review of Capacity 2009/10 is carried out any changes against the 2007 Capacity review that can be attributed to PAQTS could be used to inform an impact rating.

**Chart 4 : Evaluation criteria ratings**

<b>Evaluation Criteria</b>	<b>Rating (1-6)</b>
Relevance	4
Effectiveness	4
Efficiency	4
Sustainability	3
Gender Equality	2
Monitoring & Evaluation	3
Analysis & Learning	3

***Relevance – rating 4 (adequate quality)***

PAQTS aligns with PNG national plans and the partnership for development but could have focused more on PNG priorities such as operational systems and proactive plant protection.

***Effectiveness – rating 4 (adequate quality)***

PAQTS developed technical capabilities and some procedural capabilities in NAQIA. Management and strategic capabilities were not developed – a lost opportunity.

***Efficiency – rating 4 (adequate quality)***

Twinning is an efficient and appropriate modality for capacity development and relationship building. AQIS could have achieved more outputs with the same inputs by broadening the types of activities, the scope of activities and the way AQIS staff contributed inputs.

***Sustainability – rating 3 (less than adequate quality)***

The NAQIA-AQIS relationship is sustainable. However, changes in NAQIA and its capabilities are not yet sustainable.

***Gender equality – rating 2 (poor quality)***

Gender was poorly addressed by PAQTS. Training opportunities could have been structured to improve gender equality. The QRA and surveillance training could have included specific opportunities for women and men to contribute separately and jointly to biosecurity, given their special roles in agriculture.

***Monitoring and evaluation – rating 3 (less than adequate quality)***

Monitoring of inputs and activities was adequate but there was no monitoring of outputs and outcomes and no evaluation.

***Analysis and learning – rating 3 (less than adequate quality)***

The Capacity Review and the QRA were early examples of analysis but their potential was not realised. There is little evidence that implementation of PAQTS was informed by continuous learning.

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<sup>10</sup> 6 = Very High Quality; 5 = High Quality; 4 = Adequate Quality; 3 = Less than Adequate Quality; 2 = Poor Quality; 1 = Very Poor Quality

## 4 Conclusions, lessons and recommendations

### 4.1 Conclusions

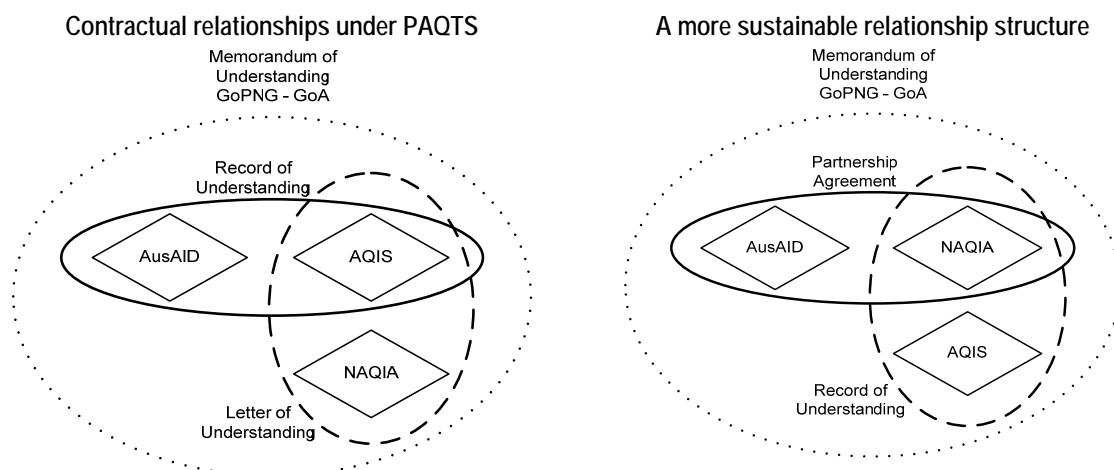
PAQTS will end in June 2010. Maintaining the established NAQIA-AQIS relationship is in the interest of both PNG and Australia because of shared biosecurity needs. The twinning modality has proven relevant and efficient. However, any future investment in the relationship from the AusAID bilateral budget should focus on the development needs of PNG and the capacity development needs of NAQIA rather than just the mutual biosecurity needs of PNG and Australia. In this way any continued support would align with the Public Service Schedule of the PNG-Australia Partnership for Development. To ensure this any continued support should be based on a thorough analysis of what NAQIA needs – much of which is already documented in the Capacity Review, Corporate Plan and QRA. Based on these needs the changes that can reasonably be brought about by a twinning program should be identified so that the most appropriate twinning organisation and staff can be identified. More detailed conclusions resulting from the terminal evaluation of PAQTS are summarised in the SWOT analysis presented in Annex 3.

### 4.2 Lessons learned

Key lessons learned from terminal evaluation of PAQTS include:

- **Twinning is an effective modality** – NAQIA and AQIS benefited from the twinning scheme. As summarised in Box 3 and Annex 2, most principles of good twinning were met by PAQTS. Lessons learned under PAQTS provide clear messages to inform future activities to maintain a strong and important relationship that underpins the inter-organisational partnership between NAQIA and AQIS.
- **Twinning should be responsive to partner needs** – PAQTS would have been more effective and sustainable if strategic and managerial capacity needs had been addressed along with the activities addressing technical and procedural capacity.
- **PAQTS relationships did not put NAQIA in a decisive position** – as shown schematically in Chart 5 the contractual relationships that governed PAQTS put AQIS in a central role. This disempowered NAQIA and was inconsistent with Australian commitments under the Paris Declaration 2005.
- **More active supervision by AusAID was needed** – PAQTS was served well by the technical staff of NAQIA and AQIS but decisions about activities and annual plans were not informed by development understanding, which few staff from AQIS or NAQIA possess. The development expertise that resides in AusAID – particularly amongst its more senior PNG professionals – was a missing element of the decision-making processes for PAQTS. AusAID could have usefully facilitated NAQIA and AQIS to re-focus on activities that addressed strategic and managerial capabilities through semi-annual supervision and a mid-term review.
- **True twinning offers additional opportunities for key staff** – PAQTS activities did not include true twinning, where staff from one organisation spend time on-the-job in a placement with the partner organisation. Such placements are one method for capacity development that complements the training and field-based learning by doing employed in PAQTS activities. NAQIA management could have identified a small number of individuals for priority placements to address agreed development priorities.

**Chart 5 : Structure relationships to have NAQIA in decisive position**



### 4.3 Recommendations

Recommendations arising from the terminal evaluation of PAQTS include:

- **AQIS is an appropriate twinning partner** – because it has a similar societal mandate and organisational function to NAQIA, AQIS (now known as Biosecurity Services Group of DAFF) is an appropriate twinning partner – particularly with its increased interest in and understanding of strategic and management issues). The biosecurity group in New Zealand Ministry of Agriculture, Fisheries and Forestry would also be an appropriate twinning partner, but because of geography the bilateral biosecurity interests of PNG and Australia are especially strong and AQIS is the right partner for a twinning scheme. It is recommended that lessons learned under PAQTS should guide future activities to maintain a strong and important relationship that underpins the inter-organisational partnership between NAQIA and AQIS.
- **NAQIA needs include strategic and managerial capacity development** – a good twinning scheme responds to the development needs and context of the developing partner. It is recommended that the strategic and managerial capacity needs, identified in the 2007 Capacity Review and the Corporate Plan and Business and Operational Plan 2008-2012, be considered in future support to NAQIA.
- **Balance technical and strategic/managerial inputs to add more value** – the strategic and managerial capacity development needs NAQIA has could be addressed through twinning activities supported by other AQIS staff. It is recommended that any future twinning scheme access required expertise such as high level management, communications and public awareness, information technology systems and strategic planning, from across DAFF.
- **PNG priority needs should drive selection of activities** – the NAQIA Board and management team have a clear understanding of their priority needs. It is recommended that in future support, the needs of NAQIA board and management be given priority in the identification of activities and budgeting. This is consistent with Article 8 of the Memorandum of Understanding between GoPNG and GoA concerning collaboration for animal and plant health and quarantine in the region.
- **Structure relationships to have NAQIA in a decisive position** – given commitments made by GoA and GoPNG in the Partnership for Development and Cairns Compact as well as the PNG Contribution to Aid Effectiveness, it is recommended that future twinning ensure a more sustainable relationship by considering NAQIA as the client and hence place it in a central position, as shown schematically in Chart 5. NAQIA has demonstrated its capacity to manage funds and could be established as the lead agency, with AusAID or an Independent Service Provider (ISP) controlling disbursement from a

special account in response to management instructions from NAQIA against an agreed plan – much as World Bank does for its technical assistance activities in PNG.

- **Make better use of the NAQIA Board** – the NAQIA Board has the capability to reform the agency into a vibrant, efficient organisation, given its strengthening financial position and clear mandate. It is recommended that future support focus on supporting the Board to exploit the opportunity to strengthen management and shift NAQIA from a civil service-like organisation into a corporate entity with a sustainable business and service delivery focus.
- **Budget for active supervision by AusAID** – AusAID should facilitate NAQIA and AQIS to focus on activities that address strategic and managerial capabilities through semi-annual supervision and a mid-term review. It is recommended that the development expertise that resides in AusAID, particularly amongst its more senior PNG professionals, be actively used to support the decision-making processes for future activities. This could be implemented through semi-annual supervision, perhaps in the form of a Program Management Committee comprising DNPM, AusAID and the partner organisations. This could use monitoring results and semi-annual progress reports to inform management decisions.
- **Allow for some true twinning activities** – it is recommended that NAQIA management identify a small number of individuals for priority placements to address strategic needs such as improved port operational management (eg a 1 month placement with Cairns Port for someone from Lae Wharf); or strategic assessment and analysis of import risks associated with mining and oil/gas site equipment (eg a 1 month placement with AQIS Canberra for someone from NAQIA technical team).

#### 4.4 Communication of lessons learned and recommendations

There are many stakeholders who contribute to the delivery of biosecurity in PNG and participated in PAQTS. Business and development partners recognise that an efficient quarantine organisation is crucial to the PNG economy. Development partners such as Australia are willing to assist GoPNG develop an efficient quarantine system that protects PNG and facilitates international trade. Resource export and import businesses want an efficient and transparent quarantine organisation that facilitates easy movement of goods. There is an opportunity for NAQIA to make use of this goodwill to enhance its capability in terms of staff and systems improvement.

Communicating lessons learned and recommendations from this evaluation to NAQIA stakeholders is an important part of the on-going maintenance of the relationship between NAQIA and AQIS, which is important for PNG and Australia.

There is an opportunity for NAQIA to lead the presentation of lessons learned and recommendations. With support from AQIS and AusAID, NAQIA could call a meeting of core stakeholders to present the evaluation findings, lessons learned and recommendations as well as discuss options for going forward. This approach has two advantages:

- it supports NAQIA to communicate and outreach with its core stakeholders, an exercise that starts the process of developing those capabilities in the organisation; and
- it helps establish NAQIA as the lead in efforts to prepare for any future activities in PNG to maintain the bilateral relationship between NAQIA and AQIS.

