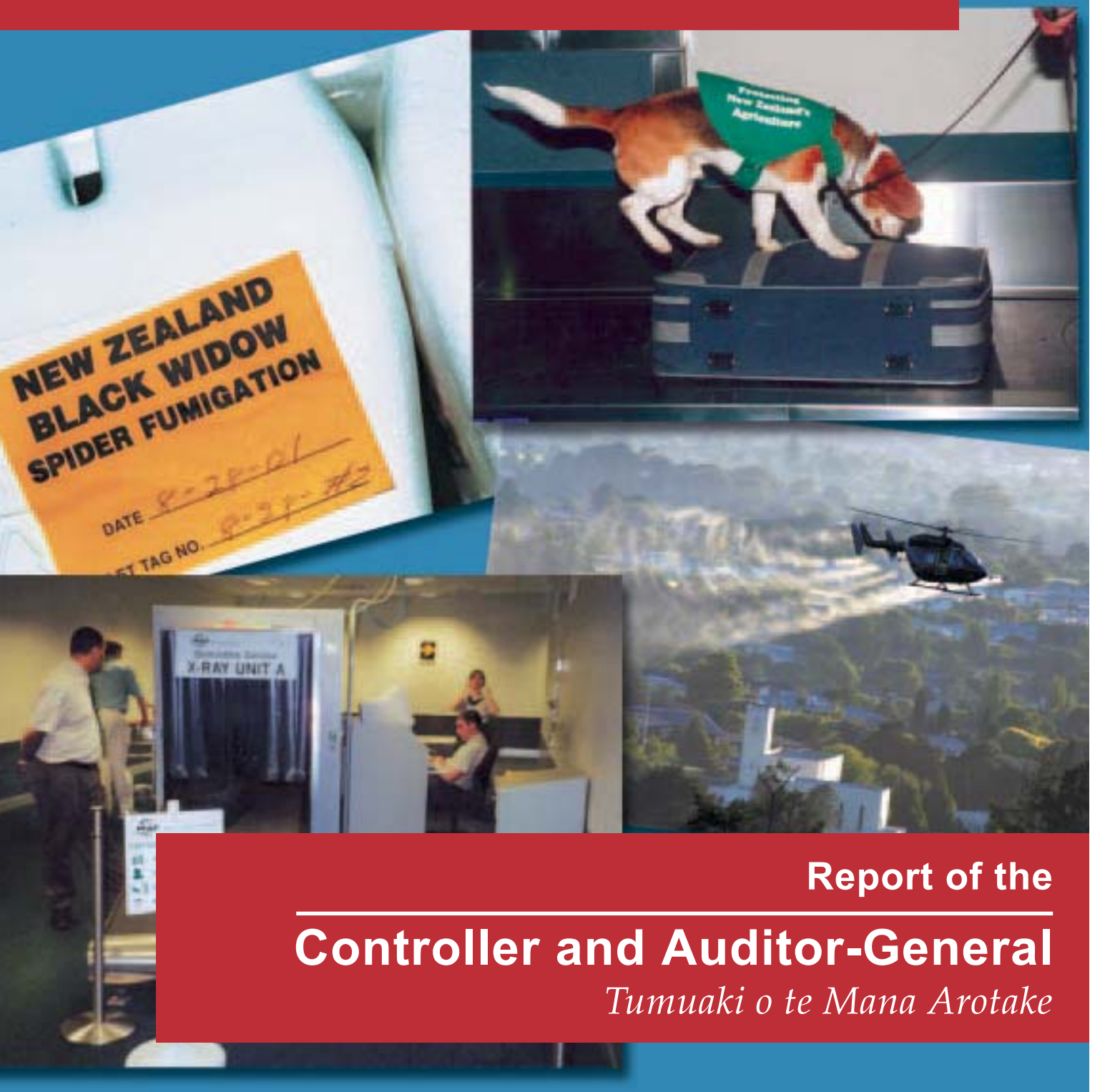
Ministry of Agriculture and Forestry: Management of Biosecurity Risks



Report of the

Controller and Auditor-General

Tumuaki o te Mana Arotake

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Ministry of Agriculture and Forestry: Management of Biosecurity Risks

November 2002

This is the report of a performance audit under the authority of section 16 of the Public Audit Act 2001.

Further results from the audit are reported in the companion volume entitled *Management of Biosecurity Risks: Case Studies.*

Key terms used are listed on pages 18-19, and a Glossary of Technical Terms is provided as Appendix 1 on pages 118-119.

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Foreword

New Zealand has a great diversity of flora and fauna, much of which is unique in the world. Our economy is heavily dependent upon primary production industries (such as agriculture and horticulture) and tourism. These industries, in turn, rely on the good health of the plants, forests, animals, and marine environment – all of which are vulnerable to harm from pests and diseases.

The geographical isolation that has contributed to the uniqueness of New Zealand's natural environment has also afforded it a good level of natural protection from many of the pests and diseases that are present in other countries. However, the nature and scale of trade and travel is increasing the pressure on our border and we are more at risk from incursions of exotic pests and diseases than ever before.

Therefore, to protect the primary production and tourism industries, human health, and our unique biodiversity, it is vital that New Zealand's biosecurity risk management arrangements are among the best in the world. The Ministry of Agriculture and Forestry (MAF) has prime responsibility for managing biosecurity risks, balanced against the need to facilitate the free movement of people and goods in and out of the country.

MAF manages the risks posed by pests and diseases in order to:

- protect the primary production industries and indigenous plants and animals; and
- demonstrate to countries to which we export that New Zealand is free from pests and diseases that could damage their flora and fauna.

Other government departments – including the Ministry of Health, the Department of Conservation, and the Ministry of Fisheries – also have biosecurity responsibilities.

The profile of biosecurity has never been higher. The 2001 outbreak of foot and mouth disease in the United Kingdom, the responses to the incursions into New Zealand of the red imported fire ant, painted apple moth, and southern saltmarsh mosquito, and the detection of live black widow spiders, have all led to a greater awareness of biosecurity issues.

FOREWORD

In this report we assess how MAF manages terrestrial biosecurity risks. We also examined seven case studies as illustrations of MAF's application of biosecurity risk policies and procedures, and identified areas where we think improvements can be made. One case study, on the management of the southern saltmarsh mosquito incursion, examines the role of the Ministry of Health.

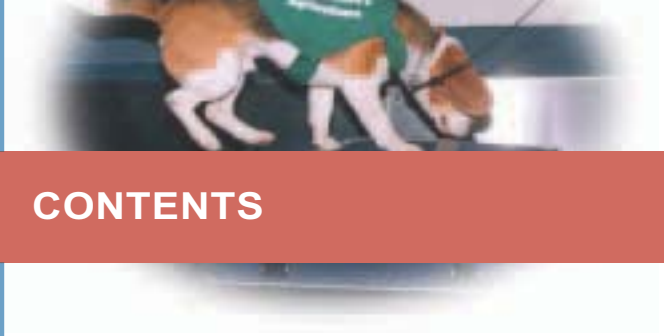
Our findings have been used by the team developing the Biosecurity Strategy that is due to be launched in 2003.

I am grateful to the staff of MAF Biosecurity and the Ministry of Health, and to the people from the many other organisations with whom we had contact during the conduct of this audit, for the co-operation that they gave my audit team.

K B Brady
Controller and Auditor-General

20 November 2002

Contents



CONTENTS

Part One

Introduction

What Is Biosecurity?

1.1 "Biosecurity" can be described as:

- the protection of the economy, environment, and people's health from the risks posed by unwanted exotic pests and diseases entering the country; and
- the control of endemic pests and diseases within the country.

1.2 Threats to the economy, environment, and people's health include the pests and diseases themselves and the pathways by which they may enter the country.

1.3 Geographic isolation has given New Zealand an advantage in the battle to protect its biodiversity, human health, and primary production industries from pests and diseases that are present elsewhere. But, equally, New Zealand has a lot to lose from biosecurity breaches – some of which could cause substantial damage to the economy, environment, and/or public health.

1.4 The management of biosecurity risks is a complex, multi-agency business that is constantly changing as new threats emerge, and new methods to combat these threats are developed.

Who Is Involved in Managing Biosecurity Risks?

1.5 A wide range of governmental agencies and private sector companies is involved in managing biosecurity risks. The general public also has an important role to play. The various parties are illustrated in Figure 1 on the next page.

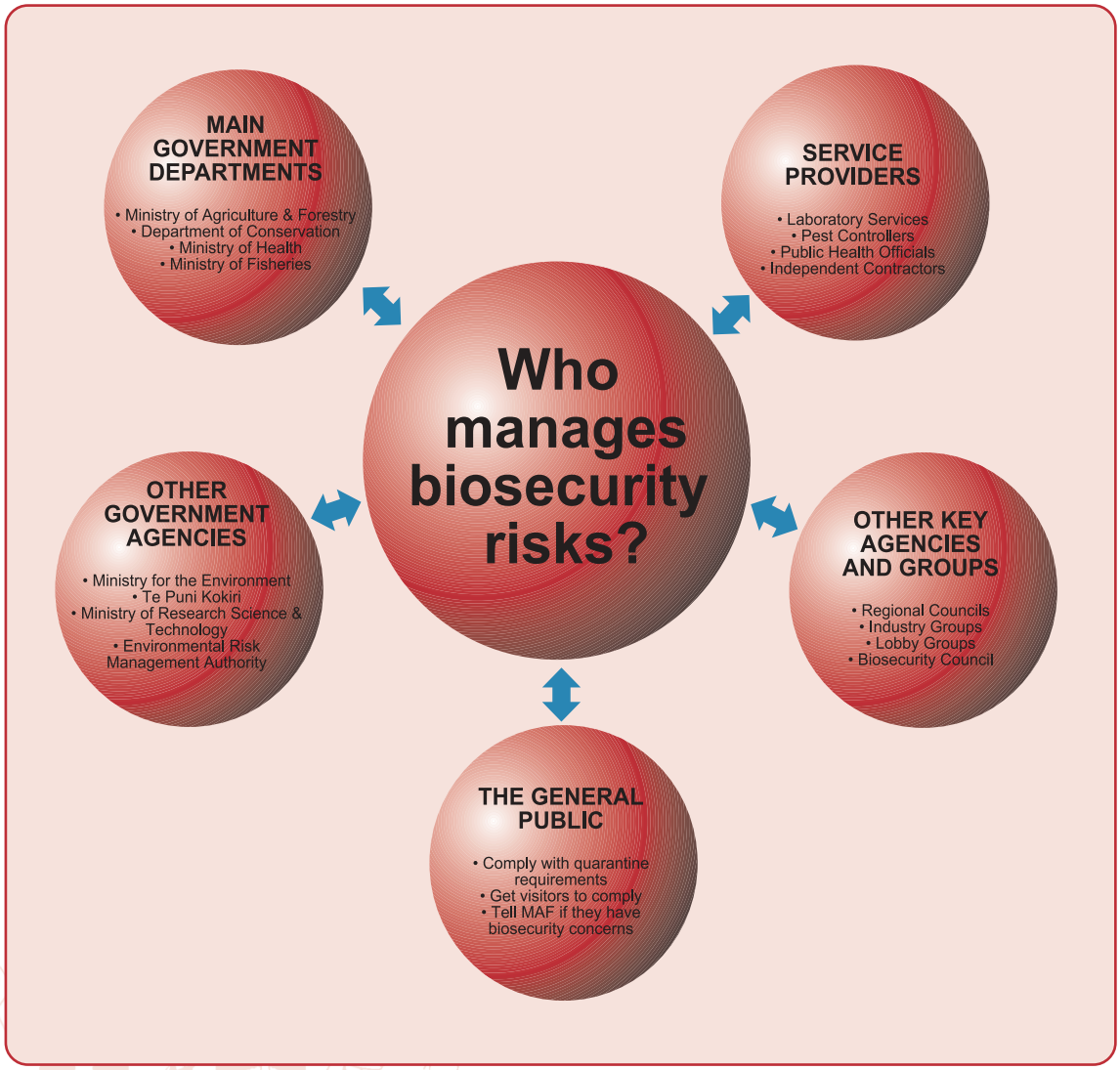
Central Government

1.6 Four government departments ("the four main departments") have the following broad biosecurity responsibilities:

- Ministry of Agriculture and Forestry (MAF) – pests and diseases in the terrestrial and fresh water environment that affect the primary production industry, animal welfare, and indigenous flora and fauna;
- Department of Conservation (DOC) – indigenous flora and fauna;

- Ministry of Health (MoH) – people's health – such as disease-spreading mosquitoes; and
- Ministry of Fisheries – marine environment.

Figure 1
Who Manages Biosecurity Risks?



1.7 Each department is funded to manage biosecurity risks relevant to its areas of responsibility, and each has at least one Chief Technical Officer appointed under the Biosecurity Act 1993 with specific responsibilities.

1.8 Other departments and agencies – including the Ministry for the Environment, the Environmental Risk Management Authority, the Ministry of Research, Science and Technology, and Te Puni Kōkiri – contribute to the Government's Biosecurity Programme[1], the implementation of which MAF co-ordinates (see Part Six starting on page 81).

The Biosecurity Council

1.9 Representatives from the four main departments, other government agencies, and environmental and industry groups are also involved in managing biosecurity risk as members of the Biosecurity Council. The Council provides advice on biosecurity matters to the Minister for Biosecurity, and co-ordinates activities between government departments and other agencies that have biosecurity responsibilities.

1.10 Further information about the role and responsibilities of the Biosecurity Council is provided in paragraphs 4.90-4.98 on pages 66-68.

Regional Councils

1.11 Regional councils play a key role in managing biosecurity risks, particularly in relation to weed and pest control and management. They do this by developing regional pest management strategies[2] and small-scale management programmes.

Private Sector

1.12 Some industry groups also develop pest management strategies for the management of biosecurity risks harmful to their industries. To date, only two pest management strategies have been approved – for bovine tuberculosis and for American foulbrood in bees.

1 MAF Biosecurity (part of MAF) is the lead agency for managing risks to New Zealand's biosecurity. It co-ordinates the Government's Biosecurity Programme that is referred to in this report as the Biosecurity Programme.

2 Further information on pest management strategies is included in paragraphs 6.116-6.124 on pages 108-109.

1.13 Individuals and companies are contracted by government departments and agencies to provide a range of services – including surveillance programmes, incursion response activities, laboratory diagnostic services, and research.

The General Public

1.14 The general public has a very important role to play in helping to strengthen biosecurity by:

- complying with quarantine requirements when entering the country;
- informing visiting friends and relatives of the need to not endanger New Zealand's economy and unique biodiversity; and
- being vigilant and informing MAF of any plants, pests, or diseases that they suspect could pose a biosecurity threat to the country.

The Government's Biosecurity Strategy

1.15 In November 2000, the Government announced additional funding of $0.96 million for the Biosecurity Council to develop a Biosecurity Strategy by December 2002.

1.16 A Biosecurity Strategy Development Team was established in December 2001. After a process that involved consultation with a wide range of stakeholders, the Team produced a draft strategy document that was considered by the Biosecurity Council in June 2002. This draft is currently under review, and the Strategy is due to be launched in 2003.

1.17 We met with the Strategy Development Team a number of times throughout the audit. The Team has used our findings in the development of the draft Strategy.

How Great Are the Risks and Potential Consequences for New Zealand?

1.18 Figure 2 on the opposite page provides a timetable of some key developments and events in biosecurity since 1993, with references to this and other reports on the subject.

Figure 2
Recent Developments and Events in Biosecurity

	Event	Report
1993	• Biosecurity Act enacted.	
1995	• Quarantine detector dog programme training centre established.	
	• Fruit fly detected and eradicated in Auckland.	*Controls to Prevent the Entry of Fruit Fly into New Zealand,* CAG Third Report for 1994.
1996	• Ministry of Forestry eradicated white spotted tussock month from Auckland.	
	• Environmental Risk Management Authority established.	
	• Introduction of detector dogs and X-ray machines at Auckland International Airport.	Page 92 of this report.
1997	• Rabbit calicivirus illegally imported and released.	Page 23 of this report.
	• Ministry of Forestry amalgamated into MAF.	
	• Minister for Biosecurity formed Biosecurity Council.	Page 66 of this report.
1998	• Southern saltmarsh mosquito detected in Napier.	Case Studies pages 27-55.
1999	• Government-commissioned 'Carter Review' of border services reported.	*New Zealand's Border: The Effective and Efficient Management of Border Services,* 1999.
	• Painted apple moth detected in Auckland.	Case Studies pages 57-76.
2000	• Varroa bee mite detected in South Auckland.	Case Studies pages 77-94.
	• Biodiversity strategy launched.	Page 60 of this report.
	• Parliamentary Commissioner for the Environment published review of the management of biosecurity risks to the environment.	*New Zealand Under Siege: A Review of the Management of Biosecurity Risks to the Environment,* 2000.
2001	• Red imported fire ant detected at Auckland International Airport.	Case Studies pages 95-111.
	• MAF vets sent to UK to help fight foot and mouth disease.	Case Studies pages 129-150.
	• Work started on Biosecurity Strategy.	Page 68 of this report.
	• Biosecurity awareness programme launched.	Page 110 of this report.
	• Instant fines introduced for people entering New Zealand who make false declarations.	Page 113 of this report.
	• Importation of Californian table grapes suspended.	Case Studies pages 5-25.
	• Southern saltmarsh mosquito detected in Kaipara Harbour.	Case Studies pages 27-55.

Illustration of New Zealand's Biosecurity Risk

1.19 The outbreak of foot and mouth disease that was confirmed in the United Kingdom (UK) on 20 February 2001 highlights clearly the importance of having effective biosecurity arrangements. Between February and September 2001, over 2000 premises in the UK were officially declared to be infected by foot and mouth disease, and over six million animals were slaughtered.

1.20 The direct cost of the outbreak to the public sector in the UK is estimated to be over £3,000 million, and over £5,000 million to the private sector, affecting not just the farming industry but general trade and tourism.[3] In addition to the financial effects, it had a major impact on the lives of many people – the disease was traumatic for those affected by, and involved in the response to, the outbreak.

1.21 The impact of such an outbreak here would be far more severe. This country is highly dependent, both economically and socially, on its farming industry. In the year ended 31 December 2001, agricultural exports made up 53% of total merchandise exports.[4] It is estimated that an outbreak like the one suffered in the UK would result in a $10,000 million loss in export earnings and a drop in the standard of living of 25%.

1.22 While measures in place to prevent the entry of foot and mouth disease into New Zealand have, thus far, been successful, a number of other incursions of a different nature have occurred. These have included:

- white spotted tussock moth;
- painted apple moth;
- varroa bee mite;
- southern saltmarsh mosquito;
- red imported fire ant;
- Argentine ant; and
- black widow spider.

1.23 There have also been a number of interceptions at the border of pests such as snakes and spiders.

3 *The 2001 Outbreak of Foot and Mouth Disease*, National Audit Office Report HC 939 – 21 June 2002.
4 Ministry of Foreign Affairs and Trade – *New Zealand External Trade Statistics December Year Ended 2001.*

Increasing Biosecurity Risks

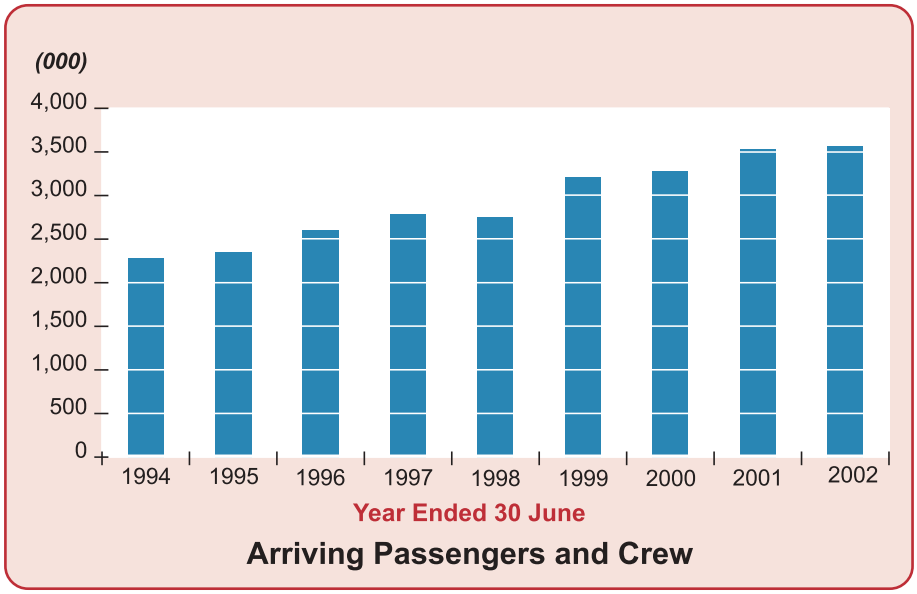
1.24 Large increases in the volume of international trade and the number of people travelling between countries mean that the risks are increasing and the border is under pressure. As shown in the first four graphs in Figure 3 on pages 16-17, these increases are reflected in correspondingly large increases over the last eight years in the numbers of aircraft, passengers, and sea containers entering New Zealand each year. The volume of mail entering the country that is inspected by MAF has shown a similar increase.

1.25 Increased funding (see fifth graph in Figure 3 on page 18) has strengthened some components of the Biosecurity Programme to address the increased risks.

1.26 At the same time as these actual increases in biosecurity risk have occurred, New Zealand's knowledge and understanding of the risks that face the country have also increased. This increase in knowledge and understanding is due to, for example, the greater scientific expertise and technology that can be applied to biosecurity, and an increased appreciation of New Zealand's unique environment. These developments have been accompanied by closer international scrutiny of New Zealand's measures to ensure they do not represent unwarranted barriers to trade.

Figure 3
Increasing Risks to and Costs of New Zealand's Biosecurity

Passenger and crew arrivals, and aircraft arrivals, have increased by 56% and 95% respectively in the eight years from 1993-94 to 2001-02.



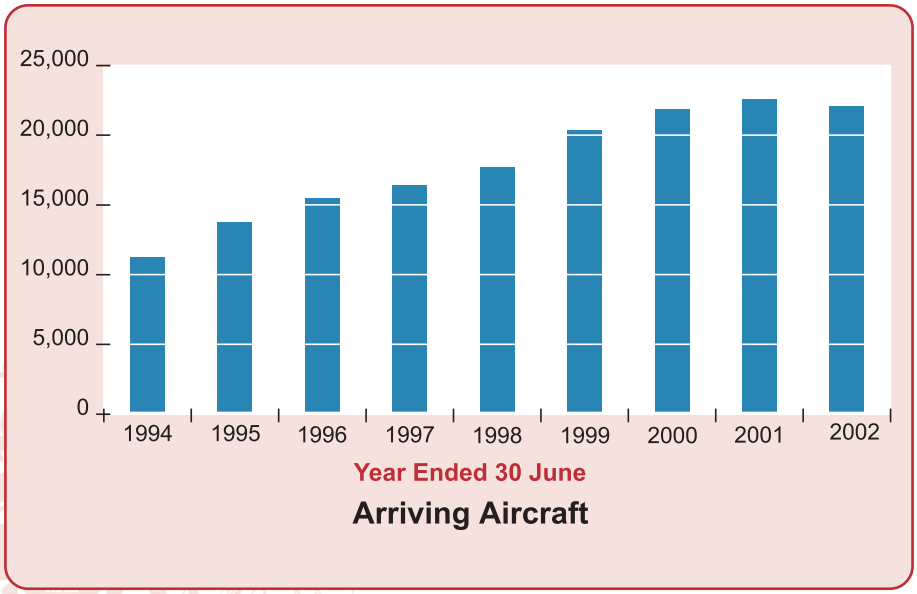
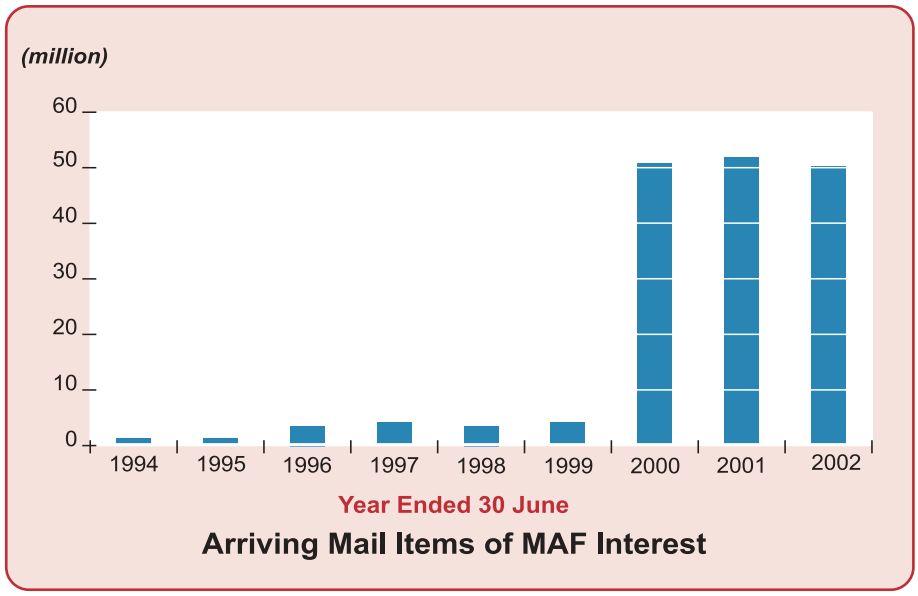
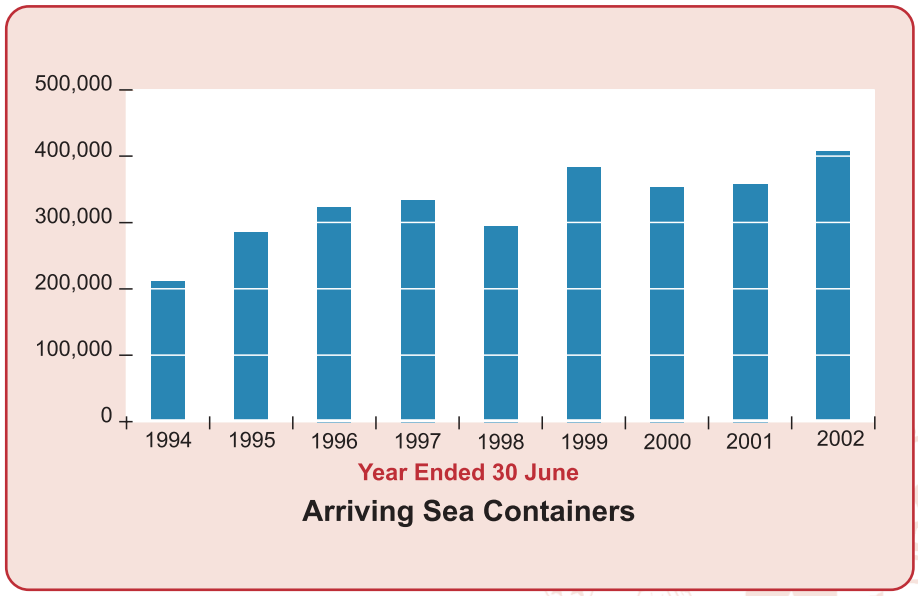


Figure 3 – continued

Arriving mail items of MAF interest have also increased[5], and 96% more sea containers were landed in 2001-02 than eight years earlier.



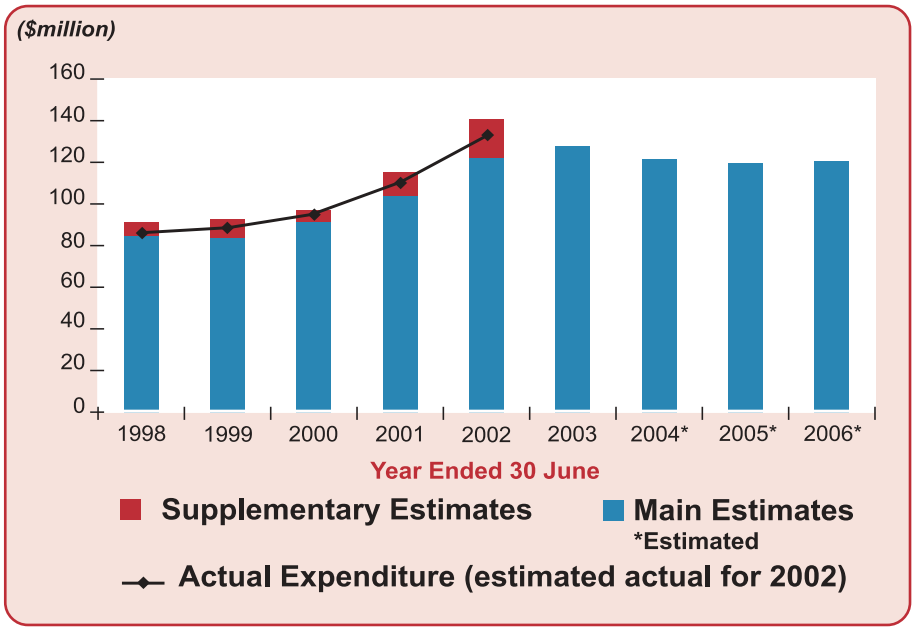


Source for all data in the four previous graphs: *Annual Statistics Report 1993/94 – 2001/02,* MAF Biosecurity Authority, Border Management Group.

5 The large increase in the number of mail items in 1999-2000 is due to MAF including letters, in addition to parcels, in its inspections from this date.

Figure 3 – continued

Government expenditure on biosecurity has increased by 55% over the period 1997-98 to 2001-02.



Source: *The Estimates of Appropriations for the Government of New Zealand for the Year Ending 30 June 2003*, page 103.

Key Terms

1.27 To assist the reader, we list in the following paragraphs explanations of the key terms that we use most often in the report. A glossary of technical terms is provided in Appendix 1 on pages 118-119.

1.28 **Biodiversity** is the number and variety of species of flora and fauna in an ecosystem.

1.29 **Biosecurity** is protection from the risks posed by organisms to the economy, environment and people's health, through exclusion, eradication, and control (Biosecurity Council working definition, 2000). **Terrestrial biosecurity** (the focus of this audit) is concerned with biosecurity risks to the primary production sector, the environment, and public health. **Marine biosecurity** (the responsibility of the Ministry of Fisheries) is concerned with biosecurity risks to the marine environment.

1.30 **The Biosecurity Programme** is the range of activities and measures designed to protect New Zealand from biosecurity risks. MAF leads the Government's Biosecurity Programme that includes measures such as pre-border risk analysis, border inspections, and surveillance for unwanted pests and diseases.

1.31 **Biosecurity Risks** are pests and diseases that cause harm to the environment and to the health of people and animals.

1.32 **Border** refers to the various points at which people, vessels, and goods can enter the country. The coastline forms part of the border. Official border points where people, vessels, and goods are assessed as to whether they are permitted entry conditionally or unconditionally include airports, sea ports, and the New Zealand Post international mail centre in Auckland.

1.33 **Import health standards** are specifications with which a country's export certification system must comply. Import health standards are one of the first lines of defence against unwanted pests and diseases.

1.34 An **Incursion** is the entry and establishment of a pest not previously known to be established in New Zealand.

1.35 A **Pathway** is the way in which an exotic pest or disease may be transported into the country. Pathways include goods, the material in which goods are packaged, containers, luggage, aircraft and vessels, and natural pathways such as wind and the sea.

1.36 A **Pest** is any noxious or destructive species of plant or animal.

1.37 The **Primary Production Sector** comprises the agriculture, horticulture, viticulture, forestry, and fishery industries.

1.38 A **Risk Analysis** is a process for evaluating the likelihood of entry, establishment and spread of pests or diseases in New Zealand, and associated potential biological or economic consequences.

2

Part Two

What This Report Is About

Purpose of Our Audit

2.1 The purpose of our audit was primarily to examine, and provide information to Parliament and the public on, how MAF manages biosecurity risks.

2.2 The authority for this audit is section 16(1)(a) of the Public Audit Act 2001 that enables the Auditor-General to examine the extent to which a public entity is carrying out its activities effectively and efficiently. Under section 16(2) an audit may relate to one or more public entities.

Why We Looked at Biosecurity Risk Management

2.3 With biosecurity, zero risk is not possible. Even in the absence of trade or travel, harmful pests and diseases can reach New Zealand by natural pathways. In addition to the natural and accidental ways in which pests and diseases enter the country, there is a risk of unwanted organisms being introduced deliberately and illegally – as happened when rabbit calicivirus disease was introduced into the South Island in 1997.

2.4 The management of risk is therefore critical to the way that MAF and other agencies protect the primary production sector, indigenous flora and fauna, and public health. Our audit concentrated on the risk management dimension of biosecurity activity across the four main departments.

2.5 The management of biosecurity risk requires many individuals with a wide range of skills and experience from a large number of organisations to work together, on highly technical issues, and often with limited time. Effective biosecurity risk management requires:

- appropriate and transparent arrangements for setting ***funding priorities*** for biosecurity risk management activities;
- clear ***allocation of roles, responsibilities, and accountabilities*** between the organisations involved;
- effective ***co-ordination*** of the complex and often interlinked activities; and
- a Biosecurity Programme that strikes an effective balance between:
  - ***pre-border*** security that maximises the chance of eliminating biosecurity threats before they reach the border;

- ***border*** security to stop a threat if it does reach the border;
- ***surveillance*** that detects as quickly as possible pests and diseases that cross the border;
- ***generic incursion response capability*** that maximises the chance of responding to a pest or disease appropriately, within available (and prioritised) resources;
- ***control and containment of specific pests and diseases***, including endemic pest management;
- ***education and enforcement*** that make people and industries aware of potential biosecurity threats and (therefore) more able and willing to comply with biosecurity requirements; and
- ***research*** that is targeted at the areas of greatest likely benefit to the Biosecurity Programme as a whole.

What We Did

2.6 Our audit addressed the biosecurity risk management requirements highlighted in paragraph 2.5 through an examination of organisation structures, policies, and procedures. We also carried out detailed reviews of seven case studies selected to enable us to assess how the policies and procedures of the Biosecurity Programme have been applied in specific circumstances.

2.7 We looked at terrestrial biosecurity and the functions of MAF. But because biosecurity requires the involvement of a range of agencies, we also undertook some limited examination of MoH biosecurity arrangements and held discussions with DOC.

2.8 We reviewed MAF and MoH documents – including policies, standards, minutes of meetings, and operational plans.

2.9 We interviewed staff from three of the four main departments and from other organisations involved in terrestrial biosecurity (see Appendix 3 on pages 122-124).

2.10 Biosecurity has an important international context. We therefore decided to extend our field work to looking at aspects of the operations of the:

- Department of Agriculture, Fisheries and Forestry, Australia – including Biosecurity Australia, and the Australian Quarantine and Inspection Service;

- Queensland Government Department of Primary Industries – including the Fire Ant Control Centre, Brisbane; and
- United States Department of Agriculture, Animal and Plant Health Inspection Service.

Case Studies

2.11 We selected seven topics for case studies, which we examined in detail. The results of our examinations are contained in a companion volume to this report. We describe briefly each of the seven case studies below.

Importation of Table Grapes from California

2.12 We selected the importation of table grapes from California to enable us to examine MAF's pest risk analysis process. It also gave us the opportunity to examine the tension that exists between the demands of trade and need for effective biosecurity measures.

Response to the Incursion of the Southern Saltmarsh Mosquito

2.13 The southern saltmarsh mosquito is a carrier of Ross River virus. Because of the threat to public health, MoH has been responsible for managing the response to this pest. This incursion therefore gave us the opportunity to:

- establish whether there are issues that relate to having more than one agency with biosecurity responsibilities; and
- review how another agency managed a pest incursion compared to MAF's approach.

Response to the Incursion of the Painted Apple Moth

2.14 The painted apple moth has the potential to defoliate New Zealand's native and exotic forests. Criticism of MAF's response to the incursion of the moth led the Group Director, MAF Biosecurity to commission an independent review of the response. We examined the circumstances that led to the need for this review and MAF's reaction to the review's findings.

Response to the Incursion of the Varroa Bee Mite

2.15 The incursion of the varroa bee mite raised questions about the effectiveness of the surveillance programme. The decision not to attempt to eradicate the varroa bee mite was controversial, so we examined the process by which the decision was reached – in order to identify how effectively MAF consulted with the organisations most affected by the decision.

Response to the Incursion of the Red Imported Fire Ant

2.16 The red imported fire ant was detected at Auckland International Airport in February 2001, at which time the proposal for this audit was being prepared. This incursion gave us the opportunity to examine MAF's response to the pest while it was under way.

Management of Risks Associated with Sea Containers

2.17 For some pathways – such as mail items and passengers and their baggage – MAF is able to manage biosecurity risks by undertaking inspections of almost everything entering the country by the pathway. This level of inspection is not achievable for sea containers. Their very size and the number that enter the country each year (currently over 400,000 – see the fourth graph in Figure 3 on page 17) mean that MAF can inspect only a limited number of containers (approximately 96,000). We included this topic to examine how MAF selects the containers to be inspected and how they are inspected.

Preparedness for an Outbreak of Foot and Mouth Disease

2.18 As described in paragraphs 1.19-1.21 on page 14, an outbreak of foot and mouth disease would have a substantial impact on New Zealand's economy. We examined MAF's preparedness for responding to an outbreak of foot and mouth disease in New Zealand.

Expert Advice

2.19 We obtained advice from Dr Bruce Simpson, director of an independent biosecurity consultancy. Dr Simpson has considerable experience of biosecurity issues. He was a member of the steering committee for our audit and provided us with expertise and guidance throughout its conduct.

2.20 We also held a number of meetings with representatives of the Office of the Parliamentary Commissioner for the Environment, who provided us with valuable advice and useful background material. We also received advice from Roger Morris, Professor of Animal Health and Director of the Massey University EpiCentre.

Matters We Did Not Look At

2.21 Officers of MAF Quarantine Service carry out their duties to ensure that standards issued by MAF Biosecurity are met. Our audit was not an examination of the effectiveness of MAF Quarantine Service.

2.22 We did not look at marine biosecurity, which is the responsibility of the Ministry of Fisheries.

2.23 In looking at the Biosecurity Programme, we concentrated on the risks posed by imported pests and diseases rather than the risks posed by endemic pests and diseases. Therefore, we did not examine the important role of regional councils in biosecurity. We comment briefly on measures to control and contain endemic pests and diseases, but only in the context of how these measures relate to the wider Biosecurity Programme.

2.24 We have not reviewed biosecurity-related legislation as part of this audit, as the Biosecurity Strategy is expected to address the need for any legislative review. However, we have commented on any wider issues, including any legislative issues, which came to our attention in the course of our examination.

How We Have Reported Our Findings

2.25 Biosecurity is a large and complex topic. Many of its aspects are inter-related. We therefore decided to take a comprehensive approach, and examined biosecurity at two levels:

- a broad examination of the organisational structures and arrangements for managing biosecurity risks; and
- a more detailed examination of a number of case studies to identify how specific risks have been managed.

2.26 The results of the broad examination are reported in this volume. The results of the detailed examination of the seven case studies are reported in a companion volume (the "Case Studies").

Part Three

Summary and Recommendations

Summary

New Zealand's biosecurity arrangements are among the best in the world.

3.1 Experts here and in other countries consistently expressed to us the view that New Zealand's biosecurity arrangements are among the best in the world. Overseas organisations, even those disadvantaged by some of our officials' decisions, commented on:

- the professionalism;
- the more than satisfactory working relationships; and
- the fairness, consistency and transparency of New Zealand's approach.

3.2 We too were impressed with the arrangements. For example, the trace-back system to identify the source of pests entering the country with commodities is effective. Other countries are copying measures that were first introduced here – such as comprehensive border inspection arrangements for mail items and passengers' baggage.

3.3 The sea containers pathway – 410,000 sea containers arrived at ports in 2001-02 – is the most difficult to manage and the least well controlled. A review of the management of this pathway is under way.

3.4 We concluded that the large majority of the people running the biosecurity arrangements apply high levels of professionalism, expertise, and commitment in the conduct of their duties. New Zealand has a particularly high level of expertise in some areas of biosecurity risk management – such as pest and disease risk analysis.

3.5 A number of this country's experts also play important roles in a range of influential international organisations and committees. These links are valuable because, to be effective, biosecurity risk management has to span international boundaries. Also (as illustrated by the UK outbreak of foot and mouth disease), some serious incursions are ideally met by responses that involve close international collaboration and sharing of expertise.

Paragraphs 6.14 (page 86), 6.39-6.40 (page 92), and 6.51-6.55 (page 94).

Management of biosecurity risks is a classic example of a highly complex activity that crosses traditional organisational boundaries.

3.6 Biosecurity is multifaceted:

- The risks are wide-ranging – involving threats to the wider economy and personal wealth, to the primary production sector and animal health, to human health and well being, and to New Zealand's biodiversity.
- The range of possible preventative measures is extensive – involving pre-border and border security, surveillance, responding to incursions, control and containment of specific pests and diseases, education, enforcement, and research.

Paragraphs 4.22-4.28 (page 53) and paragraphs 4.49-4.50 (page 58).

Managing risks and setting priorities across the various threats and between the different possible responses is a massive challenge that the Government faces in dealing with a range of cross-sectoral issues, not just biosecurity. It requires officials across Government to work closely and effectively together.

3.7 Relationships between the three departments that we examined (MAF, MoH and DOC) are generally sound, but the difficulty of their working together effectively across the wide range of complex issues that biosecurity presents cannot be overstated. To have some chance of success there need to be:

- clear roles and responsibilities;
- clear accountability for the Biosecurity Programme;
- agreement on a common outcome; and
- an agreed, common framework for assessing risks and priorities.

Paragraphs 4.12-4.18 (page 50) and 4.54-4.59 (page 58).

Roles and responsibilities have been unclear, but the departments have been developing a framework to allocate responsibility and improve co-ordination.

3.8 For some pests and diseases it is clear to officials which department should have responsibility for managing the threat they pose. For example, foot and mouth disease is primarily a threat to the agricultural sector and is therefore MAF's responsibility. But for some pests and diseases responsibility for managing the threat can be less clear – the two main pests of table grapes from California are separate concerns of MAF (the glassy-winged sharpshooter) and MoH and DOC (the black widow spider). As the department with the most funding for biosecurity, MAF tends to take responsibility, even though the main threat may not be to the sectors of greatest concern to MAF.

3.9 Arrangements have been improved through measures such as Memoranda of Understanding between the departments, but the amount of inter-departmental contact is still too low and irregular to support important activities such as strategic planning for biosecurity. Ensuring that the decisions taken and recommendations made at all key meetings are recorded will also improve co-ordination, both between and within the main departments.

Paragraphs 4.54-4.71 (page 58).

There is currently no clear accountability for the Biosecurity Programme as a whole.

3.10 The Biosecurity Council's broad membership and lack of mandate has limited its potential effectiveness. Quite appropriately, it does not have an operational focus, but its role and responsibilities need to be clarified, to highlight its primary role of providing advice to the Minister on biosecurity matters.

3.11 Most importantly, the accountability arrangements for the whole Biosecurity Programme need to be clarified and adjusted to more transparently reflect the specific accountabilities of the chief executives of the main departments.

Paragraphs 4.87-4.98 (page 65).

A lack of clear and agreed goals and outcomes for biosecurity activities has contributed to the lack of clear accountability, and has sometimes made it difficult for the departments to find common ground from their different perspectives.

3.12 Effective co-ordination requires clarity about goals and outcomes. But there are currently no clear goals or outcomes for biosecurity. Work under way on the Biosecurity Strategy is intended to develop a statement on the *appropriate level of protection* against biosecurity risks. It is important that the main departments work together to ensure that they can all accept and be committed to this statement, and that they then use it to help make their approaches to biosecurity more transparent and consistent.

Paragraphs 4.72-4.75 (page 63) and 5.18-5.20 (page 78).

There is little systematic analysis of the relative benefits and costs of the different components of the Biosecurity Programme.

3.13 Each of the four main departments separately receives funds through Votes Biosecurity, with around 93% going to MAF – which runs most of the core components of the Biosecurity Programme (pre-border and border security, surveillance, etc.). Changes to the core components have been made on an unplanned basis – for example, the increases in border controls that were put in place in response to the risk of foot and mouth disease – without systematic assessment of the costs and benefits of competing priorities in the Programme.

Figure 4 (page 49) and paragraph 4.12 (page 50).

Deciding the allocation of resources to deal with specific threats is highly complex, and there is currently no agreed, common framework for assessment that is well communicated and understood.

3.14 Where additional funds are required – such as to fund a response to a pest or disease incursion – timeliness can be critical to mounting an effective response. There is no specific incursion response fund. However, lack of such a fund did not directly compromise any of the incursion responses we examined.

3.15 Nevertheless, our review of the response to the southern saltmarsh mosquito incursion illustrated that departments need to undertake a complex process in order to prepare a response recommendation and seek funding. The analysis required is inevitably resource-intensive and time-consuming. And to get the best trade-off between quality and comprehensiveness of information and speed of response, there needs to be close and effective communication between the departments and with others (such as the Treasury).

3.16 We consider that the current arrangements require improvement to ensure that they consistently incorporate an agreed, common framework for assessment that is well communicated and understood. The framework should enable:

- the risks of different biosecurity threats (e.g. to primary production and public health) to be assessed on a consistent basis;
- decision-makers (Ministers) to be presented with the priority for the assessed threat against all other relevant priorities; and
- a timely reassessment should any of the key assumptions or risks change after the decision has been taken.

Paragraphs 4.19-4.39 (page 51).

Some progress is being made on, for example, assessment of specific threats and on more complex risk analyses. Further work is required to improve qualitative assessment and to increase consistency and transparency of assessment methods.

3.17 Assessment of biosecurity threats is at a different stage of development depending on the sector under threat. In the primary production sector, the costs and benefits of responses are relatively straightforward to identify. For human health it is also possible to undertake some quantitative assessment. In the environmental area, valuing benefits such as protection of native biodiversity is difficult and relatively underdeveloped.

3.18 Some progress is being made on more complex risk analyses. For example, in respect of the importation of table grapes, MoH is currently preparing a health impact assessment for black widow spiders, while MAF is working with DOC on the spiders' risk to biodiversity of native flora and fauna.

3.19 Large additional funding pressures come from demands to respond to new incursions – and yet the related funding bids lack a common analytical framework. Such a framework would need to recognise that some areas of analysis are likely to provide more reliable data than others. The framework would bring together the cost-benefit analysis and other qualitative assessment, and provide a means by which decision-makers could take a view on relevant priorities.

Paragraphs 4.19-4.21 (page 51) and 6.11-6.18 (page 86).

We believe that there is a strong case for assessing all biosecurity risks on the same basis, regardless of the sector under threat.

3.20 The requirement for a consistent framework was illustrated by the way that obtaining resources for the response to the southern saltmarsh mosquito was handled. In that case, there was uncertainty and some disagreement over whether the response to the incursion should be treated as a biosecurity or health issue. In the event, the bid for funding the response was assessed against traditional health priorities (such as smoking cessation) rather than against other incursion responses, such as the painted apple moth or red imported fire ant.

3.21 Assessing all biosecurity risks on the same basis would remove the possibility that the results of different bids will differ, purely because of the different methods of assessment being used. It is an important principle that decisions about relative priorities should be transparent – and to be transparent, the decision-makers (Ministers) need access to full and consistent information and analysis.

Paragraphs 4.22-4.28 (page 53).

Public and industry involvement in biosecurity measures is important – because they play a key part in strengthening the arrangements by securing compliance with quarantine requirements and increasing the chances of identifying early those pests and diseases that do enter the country.

3.22 Members of the public initially alerted biosecurity agencies to the presence of the southern saltmarsh mosquito, the painted apple moth, and the red imported fire ant. MAF has a range of programmes and activities to help increase and maintain awareness of biosecurity threats

and what can be done to minimise them. It has started to use surveys to evaluate the effectiveness of their awareness measures.

3.23 The surveys are also providing useful information on high-risk groups and public attitudes to biosecurity measures such as aerial spraying. MAF's experience with the response to the painted apple moth incursion illustrated the need for early consultation with communities that are affected by its activities, particularly in relation to incursion responses.

Paragraphs 6.66 (page 97) and 6.128-6.143 (page 110).

While it is not possible for MAF Biosecurity to have total confidence in the work undertaken by overseas agencies, its pre-border and border measures and good international relationships substantially increase the likelihood that its requirements will be met.

3.24 MAF Biosecurity[6] necessarily relies partly on overseas agencies to ensure that countries exporting goods to New Zealand meet the biosecurity measures set out in its import health standards. Pre-border inspections and audits of these measures are appropriate and provide an effective way of raising the level of understanding with overseas agencies of New Zealand's unique biosecurity situation, and its approach to managing the risks.

3.25 Taken together, the audits and pre-border inspections foster productive relationships between MAF officials and their counterparts in the exporting countries. Good relationships tend to encourage cooperation and compliance with MAF's requirements.

3.26 In 2001-02 MAF X-rayed just over 50 million incoming international mail items, but this screening excluded approximately 22 million bulk and direct entry mail items. Most of these items present a relatively low biosecurity risk and MAF treats them as cargo. In addition, there is a large and growing number of courier packages and mail items that enter New Zealand other than through the New Zealand Post international mail pathway. These items could potentially pose a seriously high biosecurity risk, and require suitable systems to be in place to deal with the risk.

Paragraphs 6.8-6.10 (page 84) and 6.40-6.50 (page 92).

6 MAF Biosecurity has the primary responsibility for biosecurity matters within MAF. It was formed as MAF Biosecurity Authority in 1999, but is commonly referred to as MAF Biosecurity. We have used this term throughout our report.

MAF Biosecurity has groups that work relatively independently of one another, and are therefore unlikely to be making the best use of their collective capability.

3.27 MAF Biosecurity officials have a high degree of expertise, particularly in relation to the risks posed to the primary production sector.

3.28 However, the three main operational groups – animal, plants, and forest – work in a relatively isolated way. And we found inconsistencies in the way that different incursion responses have been managed. The response to the red imported fire ant has been very well managed, but (in contrast) the response to the painted apple moth has been poorly managed.

3.29 From those two and the other case studies, we identified a number of important issues that need to be addressed. The most pressing issues relate to the need for:

- closer and more effective management oversight, so that any problems with incursion responses are picked up early;
- all Chief Technical Officers to have a high level of both technical and management (including project management and communications) skills; and
- clear terms of reference for Technical Advisory Groups (which are set up to advise on each response) from the point they are established, and standard operating procedures – including arrangements for clearly documenting the Groups' decisions.

3.30 MAF Biosecurity has accepted and is addressing these issues. It has also made some progress in improving the consistency of methods and practices. But, until the three operational groups are working in a more co-ordinated way, we cannot be certain that high standards are consistently maintained throughout MAF Biosecurity. Further effort is required to make best use of the information, knowledge, expertise and good practice available.

Paragraphs 4.76-4.78 (page 64), 6.14-6.18 (page 86), and 6.88-6.100 (page 103).

We found a number of examples of workload pressures in both MAF Biosecurity and other key agencies that sometimes result in important work being deferred or slowed.

3.31 With increasing knowledge, expertise, and a new process that includes more peer review and consultation, the risk analyses to support adoption of new or revised import health standards are required to be more comprehensive. As a consequence, the time needed to complete risk analyses has increased.

3.32 MAF Biosecurity has substantial backlogs of pest risk analyses to be undertaken, which have made the prioritisation of import health standards and their related risk analyses a matter of particular concern to the department.

3.33 Surveillance to detect pest or disease incursions was considered by many of the people we interviewed (both within the main departments and elsewhere) to be the weakest component of the Biosecurity Programme. We understand that resources applied to surveillance have decreased over recent years. Historically, there has been no clear strategy for levels of and objectives for surveillance, and it is therefore not possible to judge whether surveillance is adequate or likely to lead to cost-effective outcomes.

3.34 We also found that the time-scales for planned work and reviews across the Biosecurity Programme are often changed as a result of the need for MAF Biosecurity to reprioritise its workload, particularly in relation to responses to new pest and disease incursions.

Paragraphs 5.13-5.16 (page 78), 6.19-6.32 (page 87), and 6.67-6.75 (page 97).

Some resource planning for contingencies (such as a large emergency incursion response that would need significant additional resources quickly) is undertaken, but there is not a high level of assurance that sufficient expert resources could be made available quickly and comprehensively.

3.35 We consider that the extent of reprioritising that goes on between different activities indicates that the provision of resources for carrying out the ordinary day-to-day business of biosecurity leaves little flexibility for undertaking unplanned activities.

3.36 We noted other capability shortfalls. For example:

- The National Plant Pest Reference Laboratory (NPPRL) does not have dedicated incident control staff with the skills to manage incursion responses. Staff of NPPRL did their best to overcome this shortcoming, but it still adversely affected the NPPRL's management of its component of the response to the painted apple moth incursion.
- The inability to transfer large volumes of complex data between response headquarters, the incident control facility, and field operations could compromise the management of a major incursion response.

3.37 On the basis of this evidence, and taking the advice of experts in biosecurity, we conclude that there is not a high level of assurance that resources could be found quickly and comprehensively for a very large urgent incursion response. Also, for most potential incursions, the capability gap is not precisely known. For example, MAF Biosecurity currently has resources to deal with an outbreak of foot and mouth disease involving 25 contaminated sites in the first week and 10 sites a week thereafter.

3.38 It is difficult for MAF Biosecurity to accurately predict what size of outbreak it should prepare for. The current level of resources is influenced by historical factors and what contractors can be held to.

3.39 Without a reliable assessment of the extent of the capability gap, it is difficult to determine what would be required to eliminate the gap. However, our recommendations in the following paragraphs are directed to the more obvious pressure points, and include some suggestions on how current processes and use of resources could be improved.

Paragraphs 6.101-6.110 (page 105).

Recommendations

Whole of Government – Improving Co-ordination

3.40 The Memoranda of Understanding between the four main departments should be amended to accord greater priority to regular inter-departmental contact, and to contact with regional councils, to reflect operational requirements. The Memoranda should be reviewed and updated to reflect any changes in roles and responsibilities.

3.41 All meetings between the departments should be documented to record what decisions have been taken and how the decisions were reached.

Whole of Government – Agreeing Common Outcomes

3.42 The main departments should work together to ensure that they have a consistent approach to, and application of, the statement on *appropriate level of protection* that is to be defined in the Biosecurity Strategy.

3.43 The Biosecurity Strategy should include a specification of goals and outcomes for biosecurity activities against which the activities are then measured.

Whole of Government – Strengthening Accountability

3.44 The role, membership, and mandate of the Biosecurity Council and its two forums should be reviewed taking into account the Biosecurity Strategy. The review should include consideration of the Council's role in co-ordinating and prioritising biosecurity-related research – a task that might best be undertaken by the Council's Technical Forum.

3.45 The Directors-General/Chief Executives of the main departments should meet on a regular and formal basis and report to the Minister for Biosecurity. This should be the core executive, multi-agency group responsible for strategic planning, which is able to take and be accountable for decisions in relation to biosecurity. The group should consider how regional councils could best be involved in biosecurity policy decisions.

A Framework for Analysis and Priority Setting

3.46 The main departments and the Treasury should develop an agreed, common framework for analysing the benefits and costs of:

- different categories of preventative measures (for example, pre-border, border, and post-border security) to address biosecurity risk; and
- targeting resources at different biosecurity risks.

3.47 All incursions that are biosecurity risks should be prioritised on a consistent basis, irrespective of which department is managing the response to the incursion and the main sector under threat. Comparisons of relative priorities should be presented in a transparent way, including both:

- intra-sectoral comparisons (e.g. the potential threat to human health from mosquitoes compared with other health priorities); and
- inter-sectoral comparisons (e.g. comparing the response to the incursion of the southern saltmarsh mosquito against that for the painted apple moth).

3.48 The Treasury and the main departments that may need to apply for additional funding for new incursion responses should agree on a process for doing so. This process should include clear time-lines, be documented, pre-agreed, and well communicated. Once the process is agreed, the Treasury and the departments should ensure that they have a clear, shared understanding about what procedure will be followed should any of the key assumptions or risks subsequently change.

3.49 MAF Biosecurity, together with the Treasury and the other main departments, should take the opportunity provided by the development of the Biosecurity Strategy to review the Biosecurity Programme to ensure that the balance in emphasis and funding between the different components is appropriate.

Improving the Way that MAF Biosecurity Operates

3.50 MAF Biosecurity should:

- review the goals of the Biosecurity Programme in line with the Biosecurity Strategy, and develop performance measures against which the success of biosecurity activities can be measured;
- improve its strategic oversight of other ongoing reviews (such as the sea containers review) to ensure that the effects of any unforeseen delays in completing the reviews are identified and managed;
- review its assessment of the risks posed by bulk and direct-entry mail and by other mail items, including couriered items not covered by the compliance agreement with New Zealand Post;
- implement a system to reduce the risks posed by those items that takes account of the assessed relative risks;

- use information from the sea containers review as the basis for examining the level of risk posed by this pathway relative to others, so that an appropriate level of inspections of the containers can be established;
- use information from the recently published surveillance review to develop a surveillance programme that has clear goals and objectives for surveillance activities, and in which priorities are determined in a transparent way;
- ensure that its awareness campaigns include sufficient measures targeted at high-risk groups and locations;
- continue to develop and implement measures to improve inter-group co-ordination and consistency (such as cross-group discussion of approaches to risk analysis);

and

- examine options for reducing the backlogs of risk analyses and import health standards, such as by contracting out some of the work or increasing the direct input from would-be importers (measures like this would need to be carefully assessed and tested to ensure that the integrity of MAF Biosecurity's processes is not compromised).

Improving the Management of Incursion Responses

3.51 MAF and the other departments responsible for managing pest or disease incursions should consider whether a wide-ranging review of biosecurity capability (including preparedness for one or more major incursions) is required. Such a review should be carried out after the goals and outcomes for biosecurity activities have been identified.

3.52 The Director-General, MAF should consider whether a specific capability review of MAF Biosecurity is required and, if so, how this would feed into a wider review.

3.53 MAF and the other main departments should:

- ensure that their Chief Technical Officers have an appropriate mix of management skills and sound technical knowledge;
- ensure that incident controllers with appropriate experience and resources are used for all important incursion responses;

- agree on a common purpose and core terms of reference for Technical Advisory Groups (TAGs) – from which each TAG should agree on specific terms of reference at an early meeting, and all TAG meetings should be comprehensively documented to record discussions and recommendations and how they were reached;
- develop standard reporting arrangements to enable management oversight of major incursion responses while they are under way;

and

- convene a community advisory group early in the planning of a response whenever the response has the potential to affect a community.

3.54 In respect of MAF, the Director-General should consider delegating to the Group Director, MAF Biosecurity, the power to direct a Chief Technical Officer in the exercise of statutory functions.

3.55 MAF Biosecurity should:

- develop a comprehensive operational checklist to be added to its Incursion Response Policy to help achieve greater consistency in the way incursion responses are managed;
- ensure that the information technology review for major incursion responses is completed as soon as possible and that, while the review is under way, contingency plans are in place to deal with an emergency situation;
- review the resourcing model used by the National Centre for Disease Investigation (NCDI) to see whether it would be appropriate for adoption by the National Plant Pest Reference Laboratory (NPPRL) (the review should include consideration of costs and benefits of expanding the resources of the existing NCDI group to allow them to provide services to the Chief Technical Officers of Plants and Forest Biosecurity, and also those in MoH and DOC);

and

- in conjunction with MAF Operations, work with MAF Corporate Human Resources to identify ways to address staff retention and recruitment at the laboratories.

Part Four

Arrangements for Managing Biosecurity Risks

ARRANGEMENTS FOR MANAGING BIOSECURITY RISKS

4.1 In this Part we identify:

- how the management of biosecurity risks is funded;
- how biosecurity responsibilities are co-ordinated; and
- who leads and is accountable for biosecurity.

4.2 We also assess the adequacy of the governance arrangements.

How Is the Management of Biosecurity Risks Funded?

Key Findings

4.3 The management of biosecurity risks is funded through Votes Biosecurity. The four main departments each have a share of Votes Biosecurity, with MAF receiving 93% of the total funding.

4.4 The departments can find it difficult to agree relative priorities for biosecurity activities. A particular complication is the need for them sometimes to consider and prioritise biosecurity activities against the other (non-biosecurity) activities for which they are responsible. It is not always clear against which other activities funding requests could (or should) be prioritised.

4.5 Little systematic analysis, including financial analysis, is undertaken of the relative benefits of different components of the Biosecurity Programme.

4.6 We found no evidence that the lack of a specific incursion response fund directly compromised any of the incursion responses we examined. However, departments need to follow a complex process in order to prepare a response recommendation and seek additional funding – the analysis required is inevitably resource-intensive and time-consuming. And to get the best trade-off between quality and comprehensiveness of information and speed of response, close and effective communication is needed between departments and with others such as the Treasury.

4.7 The Treasury and MoH disagree on whether the southern saltmarsh mosquito incursion should be treated as a health or biosecurity issue. We believe that there is a strong case for assessing all biosecurity risks on the same basis, regardless of the sector under threat. It is also an important principle that decisions about relative priorities should be transparent – and to be transparent the decision-makers (Ministers) need access to full and consistent information and analysis.

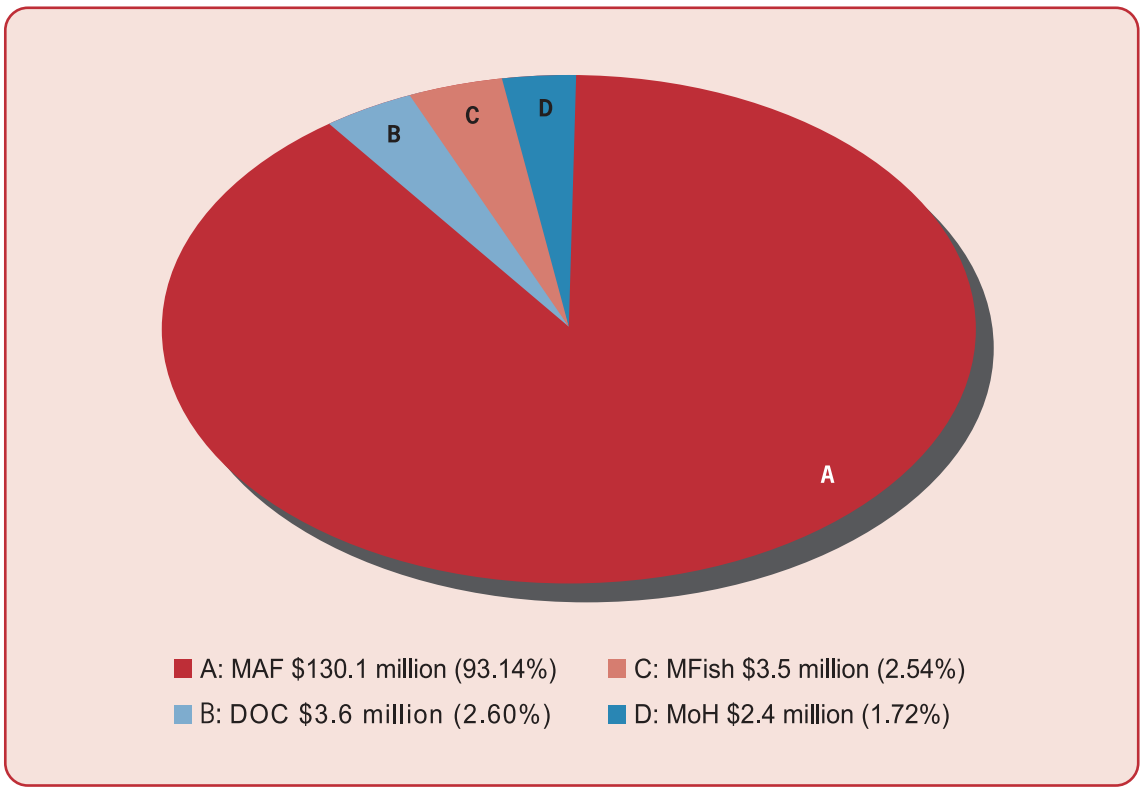
4.8 Revenue for funding the costs of biosecurity activities comes from:

- the Crown;
- regional rates (for specific measures such as pest management strategies); and
- in some cases, from the recovery of costs from those who either –
  - give rise to the need for a biosecurity service – for example, importers of goods that have associated biosecurity risks; or
  - benefit from biosecurity services – for example, exporters who benefit from having biosecurity risks to their crops effectively managed.

4.9 Crown funding for biosecurity is allocated in Votes Biosecurity for the four main departments with biosecurity responsibilities. Figure 4 on the opposite page shows the allocations for 2001-02.[7] As the lead department, MAF receives the largest share of funding.

7 Estimates for 2002-03 include additional funding of $3.261 million for a number of biosecurity initiatives, which we have referred to at relevant points in our report.

Figure 4
Allocation of Votes Biosecurity 2001-02



Figures are the cumulative Votes for 2001-02. Source: *The Supplementary Estimates of Appropriations for the Government of New Zealand for the Year Ending 30 June 2002*.

4.10 The MAF funding is managed by one of its business groups – MAF Biosecurity.

4.11 Our review of the funding arrangements led us to look at two aspects in detail:

- how funding priorities are set; and
- how funds for incursion responses are obtained.

Setting Funding Priorities

4.12 MAF Biosecurity allocates resources between the different components of the Biosecurity Programme on an historical basis, with adjustments for changes in needs and activity. For example, substantial additional funding has been allocated to border inspection activities in recent years. Such funding changes have been made without any systematic review of the relative biosecurity benefits. Similarly, there has been no systematic review of the priorities for biosecurity funding between sectors (e.g. the plant, animal, forestry, conservation, and marine sectors).

4.13 One role of the Biosecurity Technical Forum (a subcommittee of the Biosecurity Council – see paragraph 4.93 on page 66) is to prioritise new initiative bids between the departments. However, we understand that this role has been undermined because new initiative bids have been repeatedly assessed outside the agreed process.

4.14 The work done to develop the Biosecurity Strategy (see paragraphs 4.99-4.100 on page 68) has provided a range of views and information on biosecurity activities (from, for example, a review of surveillance) that should enable an assessment to be made of whether the current allocation of funding between the four main departments is appropriate.

4.15 The departments need to be able to respond quickly when a pest or disease incursion is identified. The department concerned must seek Cabinet approval to transfer funds between the different output classes of Votes Biosecurity, or to make use of unspent funds from other non-biosecurity appropriations. Funding an incursion response can therefore have a significant impact on other departmental activities.

4.16 However, each of the departments is quite differently placed to respond to an incursion. MAF has the largest allocation of Votes Biosecurity (93% of the total in 2001-02), which should give it some ability to adjust its activities to fund an incursion response. Nevertheless, MAF's ability to do this is limited by the fact that most of its biosecurity funds are already committed in contracts.

4.17 Departments other than MAF, particularly MoH, have even less scope to fund a response by changing their biosecurity spending priorities. Those departments with a small biosecurity budget inevitably face difficulties in having available funds for biosecurity activities or making use of unspent funds from other non-biosecurity appropriations.

4.18 For 2000-01, MoH was originally appropriated only $149,000 for the provision of policy advice and scientific support on public health related biosecurity matters. The additional funding of $1,448,000 for MOH's response to the incursion of the southern saltmarsh mosquito in that year was partly found by Cabinet agreeing to the transfer of appropriations from Vote Health to Votes Biosecurity-Health at the expense of planned public health activities (a smoking cessation programme).

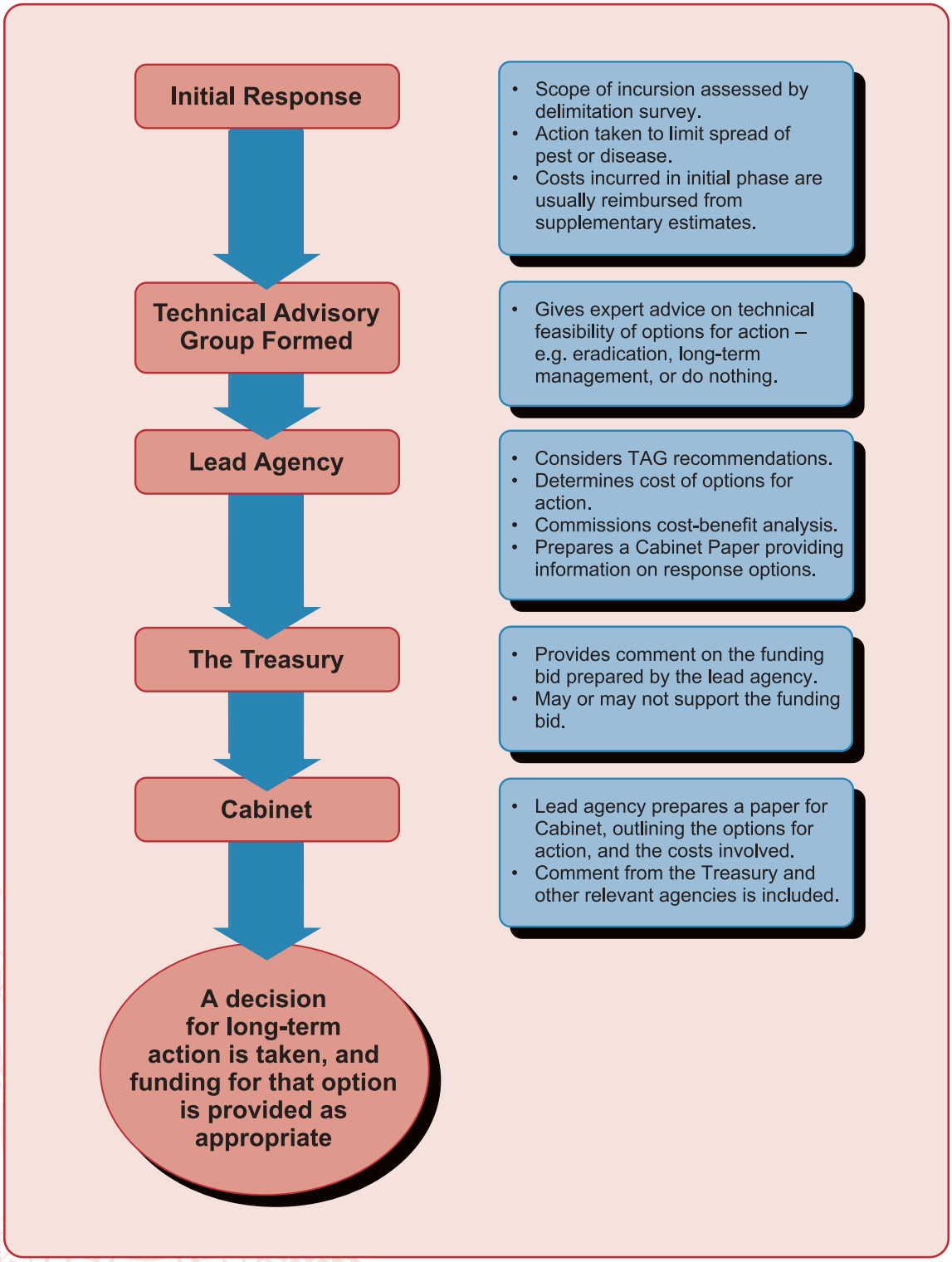
Obtaining Funds for Incursion Responses

4.19 If necessary, MAF and the other departments can ask Cabinet to approve additional spending, and/or the transfer of funds, for an incursion response (as in the MOH case quoted above). Figure 5 on the next page shows that the process required to prepare a proposal for Cabinet on funding for additional response measures is complex. It usually involves a good deal of work for a wide range of people, who need to collect sufficient information to adequately assess:

- the risks and impacts of the incursion;
- the costs and benefits of mounting a response; and
- what kind of response (e.g. control/containment or eradication) is likely to give the most cost-effective outcome.

4.20 Speed of response can be critical. For example, for many pests the chance of successful eradication will depend on how quickly the decision to eradicate is taken. It may be necessary to make a trade-off between the quality and comprehensiveness of the information collected and the speed of response. The need to make such a trade-off will be different for every incursion that occurs. It is the responsibility of the relevant Chief Technical Officer, based on advice received from the Technical Advisory Group, to make a judgement about whether and, if so, when a trade-off should be made.

Figure 5
The Process for Obtaining Funds for an Incursion Response



4.21 It is vital that decisions, and subsequent response action, can be taken swiftly where delays in action could compromise the type and effectiveness of any response measures taken. Once decisions have been taken, it is equally important that they should be revisited promptly should any key assumptions or risks change.

Southern Saltmarsh Mosquito – A Health or Biosecurity Risk?

4.22 Under current arrangements, it is not always clear against which other initiatives bids for incursion response funding could (or should) be prioritised. In the case of the response to the southern saltmarsh mosquito, the Treasury and MoH disagree over whether the incursion should have been treated as a health risk or a biosecurity risk.

4.23 The Treasury views the incursion in the context of the desired health outcome – to mitigate the risk of the mosquito spreading Ross River virus. Therefore, the Treasury's health team (rather than its biosecurity team) analysed MoH's bid relating to the mosquito and the team prioritised the bid against other health programmes.

4.24 MoH views the southern saltmarsh mosquito as a biosecurity issue, because the Biosecurity Act, not the Health Act, covers any response to this pest. MoH feels that it should have been assessed against other biosecurity priorities, which would also have enabled non-health impacts (for example, property values) to be included in the assessment.

4.25 Treating the mosquito as a health issue has important practical implications. Assessed against other health priorities, and given high competing pressures on the health budget, it is unlikely that eradication of the mosquito would be justified. It also raises the question whether other incursion responses that have clear health implications but happen to lie with MAF should be assessed in the same way.

4.26 The mosquito response was not assessed against other biosecurity priorities. However, it is possible – indeed (in our view) quite likely – that such an assessment would have resulted in it being given a different priority, on the basis of biosecurity risks and priorities at the time. There is, thus, a real possibility that, purely by virtue of the different means by which they are assessed, biosecurity threats to human health will receive a different priority from threats to animal health or to native flora and fauna.

4.27 Therefore, we take the view that the priority for responses against incursions such as the southern saltmarsh mosquito should be assessed on the same basis as other biosecurity priorities (such as the response to the painted apple moth). Human health would still be an important factor in the assessment – as it would be in the assessment of the priority for some other incursion responses managed by MAF. But using the same process would enable the decision-makers (Ministers) to consider them against other biosecurity-related impacts, such as risks to animal health or to native flora and fauna.

4.28 If an outbreak of Ross River virus occurred, management of such an outbreak and its consequences would be treated as a health issue.

Is There a Case for an Incursion Response Fund?

4.29 Feedback to the Biosecurity Strategy Development Team (see paragraph 4.99 on page 68) indicated that many stakeholders felt that an incursion response fund was required to ensure that departments could get swift access to the money needed for incursion responses. Such a fund would have the advantage of providing ready access to the money.

4.30 However, the Treasury is not in favour of a dedicated incursion response fund because it could:

- limit the opportunity for Ministerial involvement in determining how incursion responses would proceed;
- limit the potential for the Government to consider the priorities of biosecurity measures alongside other spending priorities;
- reduce the scrutiny of expenditure proposals through measures such as economic impact assessment and cost benefit analysis; and
- be difficult to determine how large the fund should be.

4.31 Some of these limitations could be overcome by having pre-conditions that would have to be met before the fund could be accessed. However, on balance, we agree with the Treasury that the limitations of an incursion response fund could outweigh the benefits. Moreover, we found no evidence that the absence of a fund had directly hindered departments' ability to respond to incursions.

4.32 However, under the current response funding arrangements a department can spend several months preparing detailed papers for Cabinet approval, and may have to seek further approval if it wishes to alter the nature of the response at a later date. In our view, for these arrangements to work well requires close and effective communication between departments and with others such as the Treasury.

4.33 Particularly in the absence of an incursion response fund, an agreed and documented process is needed that departments must follow:

- in providing the information that Cabinet requires to make funding decisions; and
- to revisit the decisions promptly when circumstances change.

4.34 Such a process would be particularly helpful to departments like MoH that are less frequently required to seek additional funding for an incursion response.

Other Possible Approaches to Funding Incursion Responses

4.35 The circumstances in which the Ministry of Civil Defence must seek funding for emergency disaster relief activities are similar to those of a biosecurity incursion response. Both involve a short response time and unknown funding needs.

4.36 In July 1993, Cabinet confirmed that the Prime Minister may authorise expenditure for Civil Defence emergencies and agricultural disasters of national significance, subject to subsequent notification to Cabinet.[8] It is likely that this funding arrangement would be implemented during an outbreak of foot and mouth disease.

4.37 Emergency funding to clear up an oil spill is immediately available from an Oil Pollution Fund collected from a special levy on the fishing, shipping, and oil production industries.[9] If additional funds are required to clean up an oil spill, emergency access to Crown funding has been arranged by the relevant central government agencies. This part of the arrangements for funding to clear up oil spills could be applied to funding for biosecurity incursion responses.

8 CAB (93) M 24/7f.

9 Part XXIV, Maritime Transport Act 1994. Wherever possible, the full cost of any oil spill clean-up operation is sought to be recovered from the spiller. The cost falls on the Oil Pollution Fund if the spiller is unidentified.

4.38 Australia has a similar funding arrangement for pest and disease incursions – which includes the agreed levels of funding that will be contributed by the Government and industry groups in the event of an incursion. For example, an arrangement exists for foot and mouth disease whereby the Government has agreed to pay 80%, and the livestock industry 20% of costs in the event of an incursion. The Australian model also classifies specific diseases into one of four categories depending on the potential impact the diseases might have on public health, the environment, and primary production industries.

4.39 There may be benefit in MAF Biosecurity and the Treasury working together to identify whether any features of these arrangements could usefully be adapted for the purposes of making funds available for urgent incursion responses.

Recommendations

4.40 The main departments and the Treasury should develop an agreed, common framework for analysing the benefits and costs of:

- different categories of preventative measures (e.g. pre-border, border, and post-border security) to address biosecurity risk; and
- targeting resources at different biosecurity risks.

4.41 All incursions that present biosecurity risks should be prioritised on a consistent basis, irrespective of which department is managing the response to the incursion and the main sector under threat. Comparisons of relative priorities should be presented in a transparent way, including both:

- intra-sectoral comparisons (e.g. the potential threat to human health from mosquitoes compared with other health priorities); and
- inter-sectoral comparisons (e.g. comparing the response to the incursion of the southern saltmarsh mosquito against that for the painted apple moth).

4.42 The Treasury and the main departments that may need to apply for additional biosecurity funding for new incursion responses should agree a process for the actions required to prepare response recommendations before new funds can be sought. This process should include clear time-lines, be documented, pre-agreed, and well

communicated. Once completed, the Treasury and the departments should ensure that they have a clear, shared understanding about what process will be followed should any of the key assumptions or risks subsequently change.

4.43 MAF Biosecurity, together with the Treasury and the other main departments, should take the opportunity provided by the development of the Biosecurity Strategy to review the Biosecurity Programme to ensure that the balance in emphasis and funding between the different components is appropriate.

How Are Biosecurity Responsibilities Co-ordinated?

Key Findings

4.44 For some pests and diseases it is obvious which department should have responsibility for managing the threat that the pest or disease poses. But for others the responsibility for managing the threat is less clear. As the department with the most funding for biosecurity, MAF tends to take responsibility, even though the main threat may not be to the sectors of greatest concern to MAF.

4.45 Co-ordination of biosecurity activities between the four main departments is improving. Recently signed memoranda of understanding should help to clarify the relationship between, and allocation of biosecurity responsibilities to, the departments.

4.46 However, we noted some failures. For example, minutes have not been taken of key inter-departmental meetings – which has caused confusion about how decisions have been reached. And inter-departmental contact is, in our view, insufficient to ensure that the departments involved are working together on the issues affecting them.

4.47 There are currently no clear joint goals or outcomes for biosecurity. The Biosecurity Strategy is expected to include a statement on the appropriate level of protection against biosecurity risks.

4.48 The business groups within MAF Biosecurity – concerned with animals, plants, and forests – need to be better co-ordinated to make the most of the groups' combined capabilities.

4.49 Biosecurity risk management is complex and requires careful co-ordination. A single pest or disease will often pose wide-ranging risks to biosecurity – with consequences for flora and fauna, public health, farming, tourism, and other commercial activities. The range of potential consequences of pests and diseases demands a co-ordinated response to incursions, effective collaboration, and consultation.

4.50 In managing biosecurity risks, it is important that the roles and responsibilities of the various organisations involved are clear. Without a shared understanding of these roles and responsibilities:

- there is scope for departments to duplicate their efforts, or for some aspects of biosecurity risk management to be overlooked;
- processes can become confused; and
- decisions taken, and the rationale for those decisions, can be unclear.

4.51 Ultimately, New Zealand's strong reputation overseas for professionally credible and effective biosecurity arrangements relies on effective collaboration between all the agencies involved.

4.52 We assessed whether:

- roles and responsibilities were clear and well understood; and
- biosecurity activities were effectively co-ordinated.

Roles and Responsibilities

4.53 MAF is responsible for managing risks to biosecurity posed by people and products entering the country and the pathways that they follow.

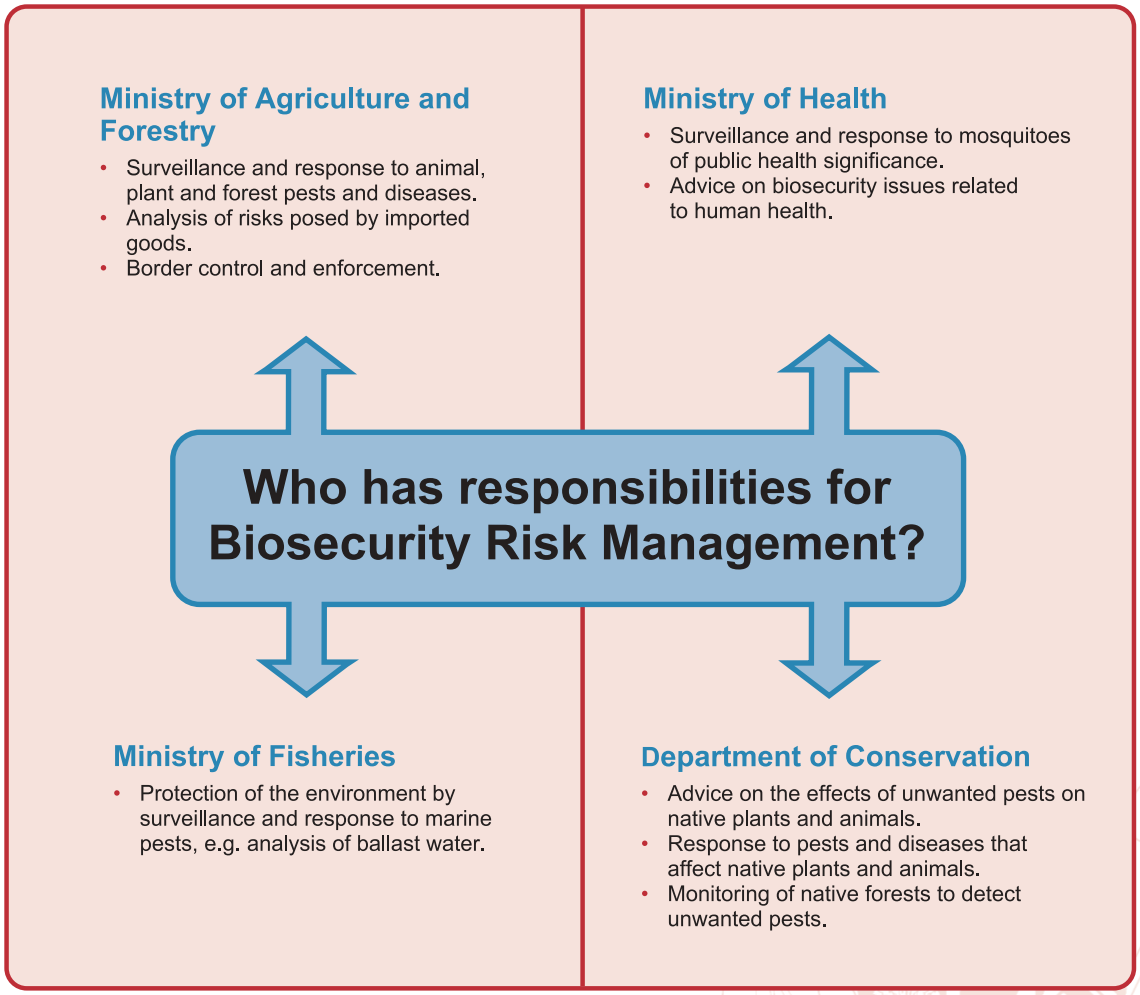
4.54 Deciding which department should have responsibility for managing a response once an incursion has been identified is not always so straightforward. Foot and mouth is an example of a disease for which responsibility is clear – the disease is primarily a threat to the agricultural sector, making MAF responsible for managing the risks. However:

- some pests may affect more than one sector; and
- some commodities may carry pests that pose a variety of risks – such as to the conservation estate, public health, and agriculture.

4.55 The difficulties in managing sources of incursions potentially affecting more than one sector are illustrated in our case study on the importation of Californian table grapes (see Case Studies, pages 5-25). Pests entering the country with table grapes are of concern to:

- MAF and the wine industry – in the case of the glassy-winged sharp-shooter; and
- MoH and DOC – in the case of black widow spiders.

Figure 6
Biosecurity Risk Management Responsibilities of the Four Main Departments



4.56 No framework was in place to allocate responsibility in such instances, though memoranda of understanding signed in July 2001 have helped to clarify roles and responsibilities. However:

- Having the majority of biosecurity funding, MAF tends to take responsibility – even though the main threat might not be to the sectors of greatest concern to MAF.
- In the Californian table grapes example, only MAF could suspend trade because only MAF employees (in this case, the Director of Plants Biosecurity) had the authority delegated to them by the Director-General MAF to revoke the import health standard that had allowed the trade to take place.
- MAF is increasingly taking responsibility for biosecurity threats to the environment in addition to its traditional focus on the agricultural sector.

4.57 Other departments with more limited funding and experience in undertaking incursion responses have occasionally led an incursion response when the threat has been directly relevant to their area of responsibility. For example, MoH led the response to the southern saltmarsh mosquito, because the mosquito transmits Ross River virus, a significant public health risk – even though MoH, at the time, had only limited experience in dealing with insect-borne pests compared with MAF.

4.58 In March 2000, the Government launched the New Zealand Biodiversity Strategy that sets national goals to conserve and sustainably manage the country's biodiversity. In 2001, from funding under the Biodiversity Strategy, the Indigenous Flora and Fauna (IFF) Group was established within MAF Biosecurity.

4.59 In order to promote a more consistent approach to the analysis and management of biosecurity risks to indigenous flora and fauna by MAF's biosecurity groups and the other main departments, the IFF Group is developing methodologies and procedures for use by these other groups. Where it is unclear which department should take lead responsibility for doing such analyses, responsibilities will be determined on a case-by-case basis.

Co-ordination Among the Departments

4.60 Responding to an incursion often requires a department to strike a balance between:

- making quick, effective decisions – such as to eradicate or limit the spread of a newly-detected pest or disease; and
- seeking views and advice from a wide range of departments and other government agencies, industry and sector groups, and consulting with local communities affected by the response.

4.61 In our view, co-ordination among the departments to achieve this balance could be improved.

4.62 To improve efficiency, effectiveness, and inter-departmental co-operation on biosecurity matters, the four main departments have drawn up memoranda of understanding (MoUs) between them. The first MoU was signed in July 2001. They are a useful basis for clarifying roles and responsibilities, and for promoting co-operation and consultation.

4.63 At a meeting of the Biosecurity Council on 6 March 2001, concern was expressed over the length of time taken to finalise the MoUs, noting that Operational Agreements to support the MoUs were still to be completed. The chief executives of the four main departments signed the Operational Agreements on 12 March 2002.

4.64 At that time, the Biosecurity Council had been in existence for some five years. While this issue was not on the Council's agenda when it was established, we would have expected priority to have been given to the task of establishing a working framework between the departments. In the event, the task has taken much longer than was necessary or desirable.

4.65 The MoUs:

- outline roles and responsibilities and the procedures for determining departmental roles;
- set out how the departments should work together to address biosecurity issues;
- require co-ordination officers from each of the departments to meet at least once a year to discuss all aspects of the MoUs; and
- indicate which of the departments will be responsible for particular biosecurity activities.

4.66 The MoUs do not cover all the necessary aspects of biosecurity management – such as responsibility for dealing with pests with the potential to transmit diseases to both animals and people.

4.67 Our examination of the importation of Californian table grapes illustrated how unclear responsibilities and the failure to document inter-agency discussions can obscure accountability for key decisions. MAF's decision to suspend trade in November 2001 was based on advice received at the time from DOC and MoH. However, both DOC and MOH were subsequently unclear as to why and on whose advice MAF had made its decision.

4.68 No formal minutes were kept of a key meeting between MAF, MoH, and DOC at which representatives of the three departments had considered the possibility of suspending trade, and which gave rise to MAF's decision. Failure to document the discussions left MAF poorly placed to justify its decision, and accountability for the decision unclear.

4.69 In our view, current arrangements for consultation and co-ordination are still not sufficiently comprehensive to ensure that the departments involved are working together on issues affecting them, or that MAF has a clear mandate to promote such collaboration. The MoUs should be revised to place a higher priority on regular inter-agency contact, including consultation with regional government.

4.70 Given its experience and leadership role in biosecurity matters, we believe there is a strong case for MAF to be made responsible for responding to most, if not all, pest incursions and disease outbreaks, regardless of their impact. Any such decision would be likely also to require a review of biosecurity funding.

4.71 In particular cases it may be desirable to retain current responsibilities. For example, MoH has built up expertise through management of the southern saltmarsh mosquito incursion over a three-year period. If such exceptions are made, it is important that they are unequivocal, so as to leave no uncertainty over which agency is responsible. Whichever agency has lead responsibility, it must ensure that the other agencies are involved and consulted appropriately.

Appropriate Level of Protection

4.72 Biosecurity is a relatively new discipline that has evolved substantially in recent years from the older concepts of quarantine. Neither biosecurity nor its outcomes are defined in legislation, and it is widely accepted that zero risk in relation to biosecurity is impossible to achieve.

4.73 Given limited financial and human resources, decisions on what resources are given to and the focus of biosecurity activities are driven by the level of risk which the Government and its agencies are prepared to accept that pests and diseases will enter the country.

4.74 A Biosecurity Strategy (due to be launched in 2003) is planned to include a statement on the *appropriate level of protection* – a sound concept, but the reality is complex. The concept will be designed to bring greater transparency to the process by which levels of risk are deemed to be acceptable, but an agreed statement will not be easy to achieve.

4.75 The statement is unlikely to specify acceptable levels for particular incursions. However, it could include a framework for decision-making that would aim to achieve consistency, openness, and transparency – particularly in respect of those most affected by the decisions. The framework would need to focus on assessment of risks and costs. For example:

- An outbreak of foot and mouth disease, or various other diseases, in New Zealand would be economically and socially catastrophic, and a high level of protection against such diseases is required. At the same time, high costs of protection need to be managed otherwise they could prove prohibitive – both in terms of direct costs to the Government and costs to industries affected by restrictive measures.
- Many pests and diseases would have a relatively lower impact were they to enter the country and become established. This lower risk needs to be taken into account in deciding how the risk should be managed – including any decisions on control or eradication in the event of an incursion.
- Some diseases have much wider ramifications than for the main affected industry. Examples are foot and mouth disease and bovine spongiform encephalopathy (BSE or 'mad cow disease'). In such cases, the mechanism for managing risks and costs needs to be particularly sophisticated, wide-ranging, and transparent – in order to gain the confidence of everyone who considers that they have a legitimate interest.

Co-ordination Within MAF Biosecurity

4.76 MAF Biosecurity was established in 1999 and co-ordinates the Biosecurity Programme. Within MAF Biosecurity there are, among others, groups dedicated to animal, plants, and forest biosecurity. There is also a Biosecurity Co-ordination Group (see Figure 8 on page 74).

4.77 When MAF Biosecurity was established, various organisational arrangements were considered. Options included structuring the groups in line with the components of the Biosecurity Programme (i.e. pre-border, border, etc). Such a structure would be difficult to operate in practice and was not favoured by industry groups – which preferred that MAF retain its animal, plants, and forest divisional groups as better reflecting MAF's external constituency. However, there is still a need to harmonise risk management strategies and co-ordinate the technical capabilities of MAF to provide comprehensive biosecurity strategic capability.

4.78 Although some progress has been made towards making the methods and practices of the different groups more consistent, the groups continue to work largely independently of one another. Further effort is required to:

- facilitate the sharing of information, knowledge and expertise; and
- make it more likely that the different groups within MAF Biosecurity will respond in a consistent manner to matters raised by departments and other agencies working with MAF.

Recommendations

4.79 The Memoranda of Understanding between the four main departments should be amended to accord greater priority to regular inter-departmental contact, and to contact with regional councils, to reflect operational requirements, and to clarify surveillance responsibilities. The Memoranda should be reviewed and updated to reflect any changes in roles and responsibilities.

4.80 All meetings between departments should be documented to record what decisions have been taken and how the decisions were reached.

4.81 The main departments should work together to ensure that they have a consistent approach to, and application of, the statement on *appropriate level of protection* that is to be defined in the Biosecurity Strategy.

4.82 The Biosecurity Strategy should include a specification of goals and outcomes for biosecurity activities against which the activities are then measured.

4.83 Senior managers within MAF Biosecurity should continue to develop and implement measures to improve inter-group co-ordination and consistency (such as cross-group discussion of approaches to risk analysis).

Biosecurity Accountabilities and Leadership

Key Findings

4.84 MAF Biosecurity is the Government's lead biosecurity agency and co-ordinates the Government's Biosecurity Programme accordingly. However, the biosecurity activities undertaken by other departments also form part of the Biosecurity Programme, but neither MAF Biosecurity nor the Biosecurity Council have the mandate to oversee these different areas of biosecurity responsibilities.

4.85 The role and mandate of the Biosecurity Council is unclear and its profile is low. Discussions at meetings of the Biosecurity Council are limited by its wide membership.

4.86 The roles of the Biosecurity Council and departmental chief executives should be clearly distinguished – with the Council responsible for advising the Minister for Biosecurity, and chief executives collectively responsible for strategic biosecurity planning, priority setting, and operations.

4.87 With funding and biosecurity responsibilities divided among the four main departments, there is no clear focus for leadership of the Biosecurity Programme as a whole, or accountability for the results. In the absence of any formal accountability arrangements, MAF – and in particular its Group Director, MAF Biosecurity who is responsible for most activities within the programme – has increasingly been expected to take the lead.

4.88 Accountability for strategic planning and reporting on implementation of the Biosecurity Programme must rest with the chief executives of the four main departments. In our view, this group should meet on a formal and regular basis and report (at least annually) to the Minister for Biosecurity on their collective management of the Biosecurity Programme.

4.89 A particular challenge for the four chief executives would be how to develop the working relationship between central and regional government agencies and, specifically, how to better incorporate regional government into surveillance and incursion response activities.

The Biosecurity Council

4.90 The Biosecurity Council was established in 1997 to provide a forum for the discussion of broad biosecurity policy issues among the departments and other agencies with biosecurity responsibilities. The Council advises the Minister for Biosecurity on:

- setting spending priorities;
- responses to biosecurity risks; and
- the appropriate level of biosecurity protection.

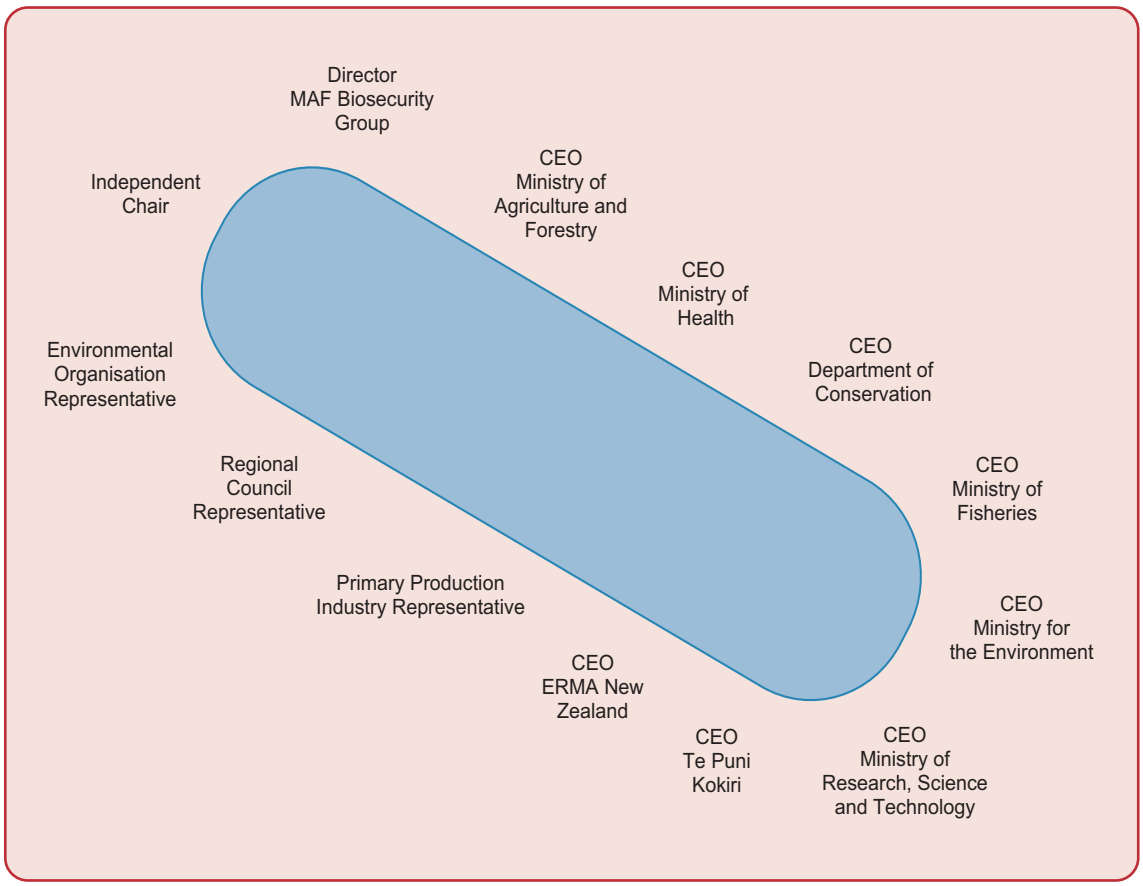
4.91 Figure 7 on the opposite page illustrates the membership of the Biosecurity Council.

4.92 The Biosecurity Council has a strategic, rather than an operational, focus. It does not have the mandate to take decisions and be accountable for them.

4.93 Two groups provide advice to the Council:

- A standing subcommittee – the Biosecurity Technical Forum – comprising the Chief Technical Officers of the four main departments, policy advisers who have a biosecurity responsibility in each of the departments represented on the Council, and other central or regional government advisers as appropriate.
- An advisory forum – the Biosecurity Consultative Forum – which provides a link between the Council and non-governmental groups with an interest in biosecurity.

Figure 7
Membership of the Biosecurity Council



4.94 The Biosecurity Council and its advisory groups meet four times a year. Over the past year, subjects discussed at these meetings have included:

- development and progress of the Biosecurity Strategy, including appointment of a Strategy Advisory Group;
- discussion and agreement to recommendations made in the Parliamentary Commissioner for the Environment's 2000 report[10] on biosecurity;
- development of the Biosecurity Awareness programme;

10 *New Zealand Under Siege: A Review of the Management of Biosecurity Risks to the Environment*, 2000.

- sign-off on new policies – such as the Biosecurity Council Policy Statement on Responding to an Exotic Organism Incursion (September 2001); and
- reports from the Council's Technical Forum and Consultative Forum.

4.95 Submissions to the team developing the Biosecurity Strategy (see paragraphs 4.99-4.100 below) have indicated that the profile of the Biosecurity Council is low and its mandate unclear. The Chairperson of the Council told us that its wide-ranging membership made it difficult to conduct business effectively.

4.96 Other members of the Council we interviewed shared this view. In particular, the Council is now unable to advise the Minister for Biosecurity on setting spending priorities, as pre-budget discussions are no longer held at meetings of the full Council because of its wide membership.

4.97 The inclusion of representatives of the primary production sector and environmental organisations means that the role of the Council is now more akin to that of its own Biosecurity Consultative Forum.

4.98 The broad membership and lack of mandate has limited the potential effectiveness of the Council, and we recommend that consideration be given to changes in its structure and function.

Developing a Biosecurity Strategy

4.99 In 2000, the Government announced funding of $960,000 to develop a Biosecurity Strategy, to be launched in 2003. The process of developing the Biosecurity Strategy has given stakeholders the opportunity to reflect on current biosecurity arrangements and possible changes to them. The Biosecurity Council was asked to co-ordinate the development of the Strategy, and a Biosecurity Strategy Development Team was established to manage the project.

4.100 The Biosecurity Strategy is intended to provide direction and guidance to all parties involved in biosecurity, as well as raise biosecurity awareness with stakeholders and the general public. As a potentially key strategic body, the Biosecurity Council could play an important part in improving the advisory arrangements and oversight of strategic issues – for example, it could oversee the implementation of the Biosecurity Strategy when it is launched.

Recommendations

4.101 The role, membership, and mandate of the Biosecurity Council and its two forums should be reviewed, taking into account the Biosecurity Strategy. The review should include consideration of the Council's role in co-ordinating and prioritising biosecurity-related research (see paragraphs 6.156-6.161 on page 115) – a task that might best be undertaken by the Council's Technical Forum.

4.102 The chief executives of the four main departments should meet on a regular and formal basis and report to the Minister for Biosecurity. This should be the core executive group responsible for strategic planning, which is able to take and be accountable for decisions in relation to biosecurity. The group should consider how regional councils could best be involved in biosecurity policy decisions.

5

Part Five

MAF Biosecurity – Organisation and Management

Structure and Funding

5.1 MAF Biosecurity is responsible for developing and implementing strategies to achieve good biosecurity outcomes. Its mission is:

to protect New Zealand's unique biodiversity and facilitate exports by managing risks to plant and animal health and animal welfare.

5.2 MAF Biosecurity protects the biodiversity by managing risks to animal, plant, and forest health. Its management is based on:

- effective biosecurity risk assessment and management programmes;
- surveillance and emergency response plans;
- enforcement and compliance strategies; and
- effective education and awareness programmes.

5.3 MAF Biosecurity is headed by a Group Director (Assistant Director-General Biosecurity Authority) and includes three groups with a sector orientation (see Figure 8 on page 74):

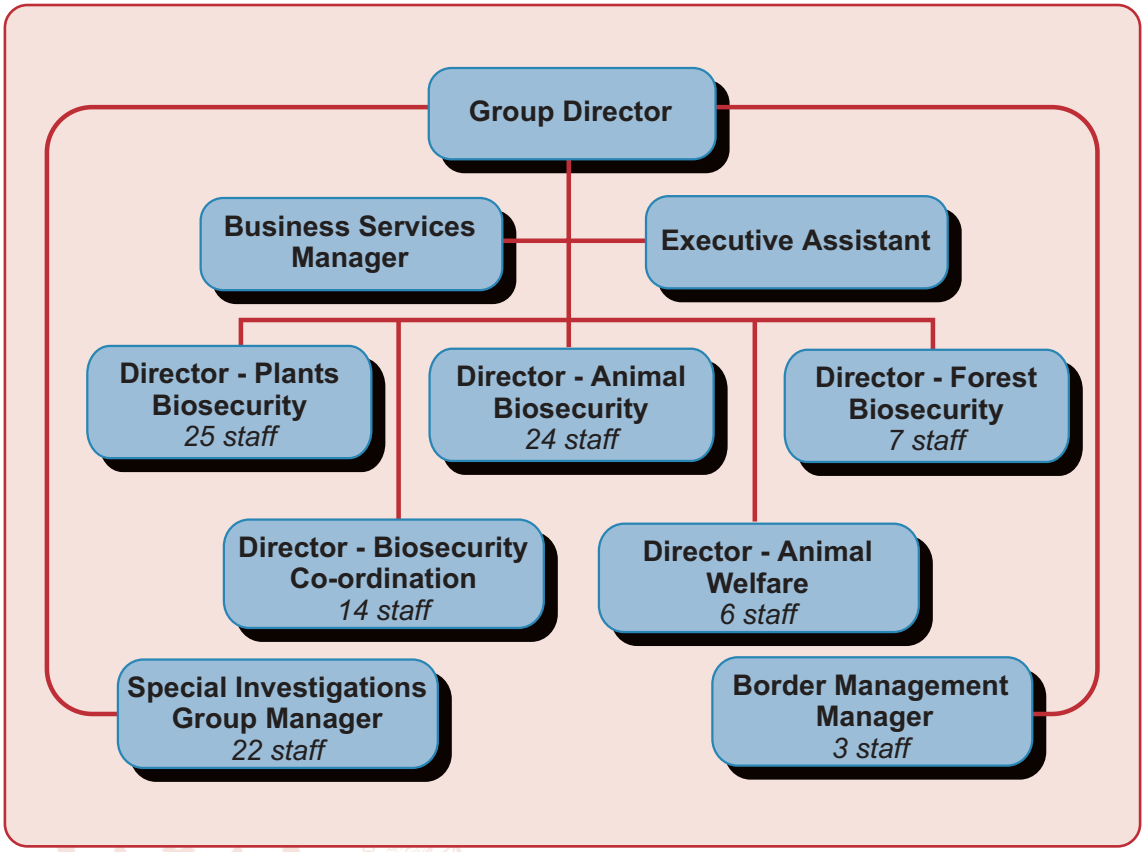
- animal biosecurity;
- plants biosecurity; and
- forest biosecurity.

5.4 MAF Biosecurity has four other groups:

- The **Biosecurity Co-ordination Group** is responsible for co-ordinating biosecurity policy, overseeing international agreements, contributing to risk analyses to minimise threats to indigenous flora and fauna, and managing contracts. The group also provides administrative and advisory support to the Biosecurity Council and its advisory groups, and the Pest Management Strategy Advisory Committee.
- The **Special Investigations Group** is responsible for responding to all serious breaches of the legislation administered by MAF. The group is also responsible for the administration of the infringement notice (instant fines) system, and employs solicitors and experienced law enforcement officers who investigate suspected breaches of legislation.
- The **Border Management Group** is responsible for developing import health standards for pathways and goods such as air and sea containers, mail items, used vehicles, machinery and tyres, and for ensuring that the requirements for aircraft, vessel, and passenger clearance are met.

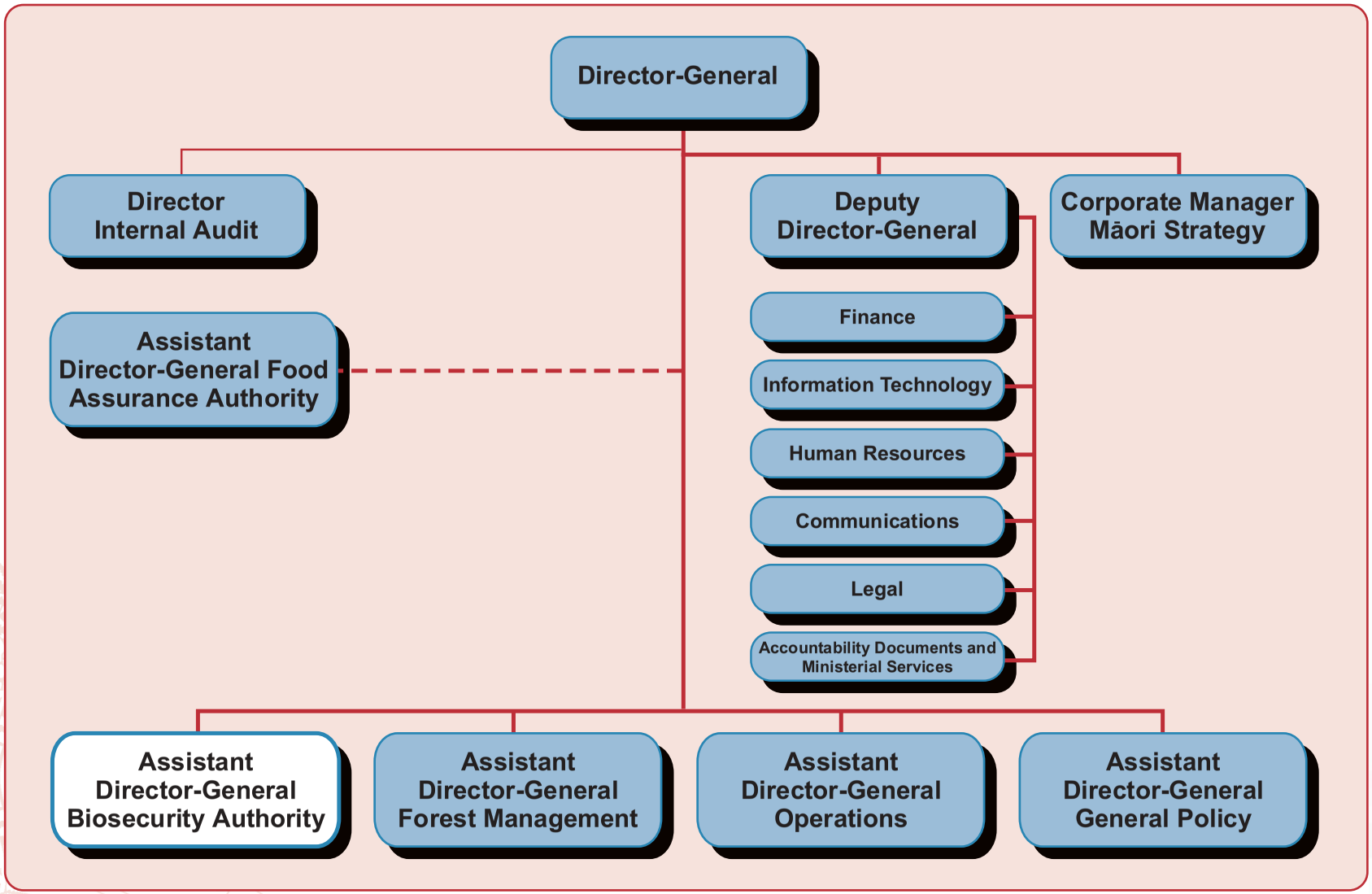
- The **Animal Welfare Group** is responsible for promoting policies to ensure that animals are treated humanely. The group investigates all complaints of cruelty to animals, resolves animal welfare problems, identifies research priorities, liases with New Zealand and international agencies involved in animal welfare, and develops a New Zealand position in relation to animal welfare and international animal trade.

Figure 8
Organisation of MAF Biosecurity



5.5 Figure 9 on the opposite page shows the relationship of MAF Biosecurity with the other groups within MAF.

Figure 9
MAF Biosecurity in Relation to Other MAF Groups

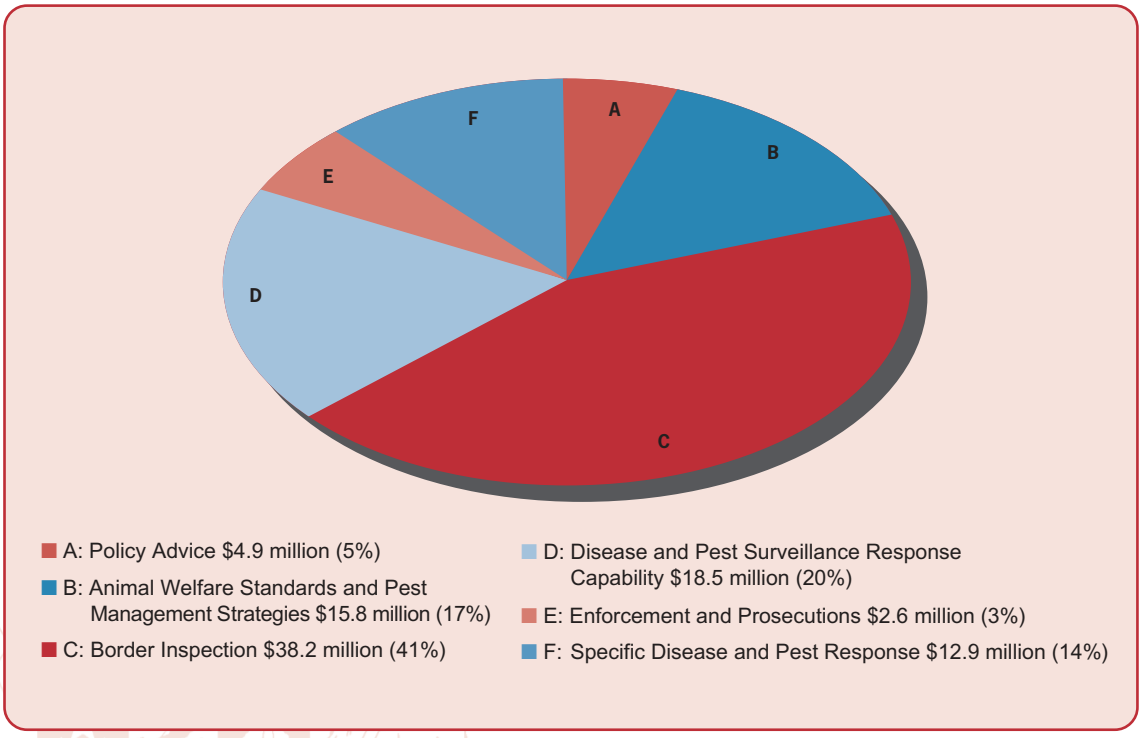


Note – Policy and Operations groups also have biosecurity roles, but these were not the subject of our audit.

5.6 Of the $130.1 million appropriated to MAF for biosecurity in 2001-02, $92.9 million in departmental appropriations related to goods and services provided by MAF and was allocated among output classes as shown in Figure 10 below. The remaining appropriations, $37.2 million, were allocated to the following activities:

- control of tuberculosis carriers ($33.2 million);
- subscriptions to international organisations ($0.2 million);
- compensation payments to farmers and beekeepers ($1.1 million); and
- provision of services related to border control activities ($2.7 million).

Figure 10
Departmental Appropriations for MAF Biosecurity 2001-02



Source: *The Supplementary Estimates of Appropriations for the Government of New Zealand for the Year Ending 30 June 2002,* pages 38-39 (listed in the order in which they appear in the *Supplementary Estimates*).

Contracting for Biosecurity Services

5.7 Before the delivery of biosecurity services was made contestable, it was MAF's responsibility to deliver as well as design a wide range of biosecurity services. However, MAF Biosecurity now contracts out the delivery of most services, or has internal contracts or memoranda of understanding with other parts of MAF – for example, border control and quarantine services, and disease investigation.

5.8 There are about 75 current contracts for the provision of biosecurity services, with a total value of $16 million, which are managed by the Contract Management Group within the Biosecurity Co-ordination Group.

5.9 MAF Biosecurity has contracts with a wide range of organisations: government departments, state-owned enterprises, private sector bodies, and individuals. Contracted services include surveillance programmes, specific incursion response activities, and other biosecurity-related services.

5.10 Decentralisation of service delivery has left a very small group of MAF Biosecurity officials in Wellington responsible for overseeing operations in other parts of the country. MAF Biosecurity now relies heavily on contracted project managers to co-ordinate large incursion responses – such as the painted apple moth in Auckland. Problems experienced in the painted apple moth response were due in part to poor co-ordination between MAF Biosecurity and those responsible for incursion management in the field (see Case Studies page 66).

5.11 MAF needs assurance that its service providers can meet their contracted obligations. To do this, MAF audits the performance of its service providers to ensure that they are able to comply with their contractual obligations. In addition, each year MAF runs incursion response simulation exercises involving MAF officials, relevant industry groups, and the contracted service providers – which also provide a means of assessing the performance of its service providers.

How MAF Biosecurity Manages Its Workload

Key Finding

5.12 Timetables for planned work and reviews of parts of the Biosecurity Programme are often changed as a result of the need for MAF Biosecurity to reprioritise its workload – in particular, in relation to responses to new pest and disease incursions.

5.13 MAF Biosecurity often has to respond quickly to pest and disease incursions. The unpredictable nature of this type of work results in the need to postpone planned work programmes.

5.14 MAF Biosecurity is currently undertaking, or has commissioned, a large number of reviews and projects. These include:

- a review of the risks posed by sea containers and a review of the surveillance programme; and
- a series of projects to enhance preparedness for foot and mouth disease.

5.15 The conduct and co-ordination of the review programme is also disrupted by the unplanned but overriding priorities that emerge throughout the year.

5.16 Workload issues are explored further in paragraphs 6.19-6.32 on pages 87-90, which look at meeting the demand for import health standards.

Goals and Performance Measures

Key Finding

5.17 Just as there are no clear objectives or outcomes for biosecurity generally, there are no clear performance measures against which MAF's implementation of the Biosecurity Programme can be assessed.

5.18 MAF Biosecurity undertakes a range of activities to implement the Biosecurity Programme. The aim of the Programme is to:

have in place a comprehensive and dynamic programme that preserves and protects New Zealand's indigenous and productive biodiversity.

5.19 It is not possible to keep all unwanted organisms out of the country. The concept of a desired or appropriate level of protection (see paragraphs 4.72-4.75 on page 63) is reflected in the stated goals of the programme:

> *Government has responsibility for indicating what level of protection it is wanting its Biosecurity Programme to achieve; and*
>
> *Government determines this level of protection by agreeing government policy, enacting domestic legislation and ratifying international treaties.*

5.20 While providing guidance for the development of biosecurity policy, these goals do not indicate what the Biosecurity Programme is designed to achieve. The development of the Biosecurity Strategy (see paragraph 4.99 on page 68) provides an opportunity for MAF to review Programme goals and measures of performance.

Recommendations

5.21 MAF Biosecurity should:

- improve its strategic oversight of ongoing reviews (such as the sea containers review) to ensure that the effects of any unforeseen delays are identified and managed; and
- review the stated goals of the Biosecurity Programme in line with the Biosecurity Strategy, and develop performance measures against which the success of biosecurity activities can be measured.

Part Six

MAF's Implementation of the Biosecurity Programme

The Biosecurity Programme

6.1 The Biosecurity Programme has seven components, each of which we examine:

- pre-border activities;
- border inspections;
- surveillance;
- incursion response capability;
- control and containment;
- education and enforcement; and
- research.

Pre-border Activities

Key Findings

6.2 MAF Biosecurity necessarily relies partly on overseas agencies to ensure that countries exporting goods to New Zealand meet the biosecurity measures set out in its import health standards. Pre-border inspections and audits of these measures are appropriate and provide an effective way of raising the level of understanding with overseas agencies of New Zealand's unique biosecurity requirements, and its approach to managing the risks. The audits foster productive relationships between MAF officials and their counterparts overseas. Taken together, the audits and pre-border inspections and constructive relationships encourage cooperation and compliance with MAF's requirements.

6.3 MAF Biosecurity officials have a high level of experience in biosecurity risk analysis – in particular, in relation to those risks associated with possible impacts on the primary production sector.

6.4 However, given the relatively isolated way in which the different groups within MAF Biosecurity work, we cannot be certain that high standards are consistently maintained throughout all the groups.

6.5 The substantial backlogs in MAF Biosecurity of pest risk analyses and import health standards are unacceptable. The backlogs have made the prioritisation of import health standards and their related risk analyses an issue of particular concern to the department.

Relevant Case Studies –
1. *Importation of table grapes from California.*
6. *Management of risks associated with sea containers.*
7. *Preparedness for an outbreak of foot and mouth disease.*

6.6 Where possible, MAF takes steps to address biosecurity risks before commodities leave their country of origin. Risks are addressed through import health standards, which specify those requirements that must be met before MAF will issue biosecurity clearance for the commodities to enter New Zealand. Import health standards specify those conditions that must be in place:

- in the country of origin or export; and
- in transit, on importation, and in quarantine.

6.7 How an import health standard is issued and compliance with it enforced is described in Figure 11 on the opposite page.

Undertaking Audits and Pre-border Inspections

6.8 It would be logistically difficult and inefficient for MAF to carry out every aspect of pre-border inspection itself. Instead, MAF relies partly on overseas agencies to ensure that commodities destined for export to New Zealand meet the biosecurity measures set out in its import health standards.

6.9 We examined how pre-border inspection works in relation to the importation of Californian table grapes:

- MAF Biosecurity officials conduct audits to determine whether the biosecurity measures required in its import health standard for the importation of table grapes are being properly applied overseas.
- MAF Quarantine Officers also undertake inspections and issue biosecurity clearance before the grapes leave the country of export. The grape importers who benefit from the trade meet the costs of the inspections.

Figure 11
An Import Health Standard – Issuing it and Ensuring Compliance

An importer wishes to import a ***Commodity***
For example: Grapes

Risk analysis undertaken, usually by MAF
A science-based risk analysis including consultation to identify, assess, manage, and communicate the risks associated with the commodity.

MAF issues an ***Import Health Standard*** which details transit, importation, and quarantine conditions that must be met for the commodity on entering New Zealand. It specifically states the treatment documentation required for each commodity – e.g. cold storage, fumigation, inspection, cleaning, phytosanitary certificate.

MAF Quarantine Service ***Inspects*** imports in the country of origin or on arrival in New Zealand to check compliance with the Import Health Standard.

MAF Biosecurity ***Audits*** the treatments specified in the Import Health Standard to identify how well importers are complying with conditions.

6.10 The audits and pre-border inspections are an effective way of making overseas agencies aware of the biosecurity risks facing New Zealand, and our approach to addressing those risks. They also help MAF officials to build productive relationships with counterparts overseas. The good relationships in turn promote cooperation and compliance by overseas authorities.

Preparing Risk Analyses To Support Import Health Standards

6.11 As a member of the World Trade Organisation (WTO), New Zealand has agreed that its biosecurity measures (including import health standards) should be technically justifiable and transparent. As part of its obligation under the WTO *Agreement on the Application of Sanitary and Phytosanitary Measures*[11], all New Zealand's import health standards are based on a documented risk analysis process[12].

6.12 This risk analysis process involves:

- identifying all pests and diseases associated with a particular commodity;
- determining whether these pests or diseases are established in New Zealand; and
- for any pests or diseases not established here, assessing the likelihood of the commodity bringing the particular pest or disease into the country, and the consequences should this happen.

6.13 Once the risks have been established, measures to mitigate them are developed which form the basis of the import health standard.

6.14 We examined the risk analysis for the importation of table grapes from California. We noted the application of domestic and international peer review, and MAF Biosecurity officials' considerable expertise in the conduct of risk analyses. Their expertise is especially well developed in relation to addressing the risks posed to the primary production sector, but MAF Biosecurity is expanding its risk analysis approach to improve its assessment of the risks to indigenous flora and fauna. Risk analysts in Biosecurity Australia (MAF Biosecurity's Australian equivalent) are adopting aspects of MAF's risk analysis for their own processes.

11 A summary of the agreement is given in Appendix 2 on pages 120-121.
12 MAF's process for conducting and applying risk anaylsis is set out in its Biosecurity Risk Analysis Policy Statement.

6.15 MAF Biosecurity is better placed to assess the impact of identified risks if it is able to quantify them in financial terms. For example, the impact of a pest that threatens an agricultural crop can be quantified in terms of the financial loss that farmers would incur if the pest were to destroy their crop.

6.16 However, impacts cannot always be readily quantified in financial terms – such as threats to the natural environment from a disease that might kill native trees. It is harder to analyse these risks because the potential impacts of the pest or disease are less certain and less easy to measure.

6.17 Assessing impacts that cannot be quantified in monetary terms is a major focus of the recently established Indigenous Flora and Fauna (IFF) Group (see paragraph 4.58 on page 60). In our view, progress will be made more quickly if the main departments work together more closely and increase their sharing of information and expertise.

6.18 The same applies to sharing information and expertise within MAF Biosecurity itself, and with other parts of MAF. We identified risk analysis as an area where gains could be made by increasing the sharing of best practice, experience, and expertise between the animal, plants, and forest groups. We also see this as a particularly important means of developing the expertise of the relatively new IFF Group.

Meeting the Demand for Import Health Standards

6.19 MAF Biosecurity comes under considerable pressure (such as from importers, exporters, and overseas governments) to issue new import health standards. Delays in issuing standards can prevent commodities being imported. Import delays can affect not only importers but also local manufacturers and exporters who use imported commodities to make finished products here.

6.20 Risk analyses involve collation, examination, and assessment of large volumes of complex information. And as knowledge and skills in risk analysis have increased, and peer review and consultation have become more thorough, risk analyses have become more comprehensive and time-consuming.

6.21 The import health standards developed out of these risk analyses can also take a long time to finalise – because, for example, both the risk analyses and the import health standards require consultation with a range of different people and organisations.

6.22 Two of the case studies illustrated issues relating to risk analyses and import health standards:

- Importation of Californian table grapes – where MAF's consultation with relevant industry groups and technical experts had to be undertaken in the context of time pressures for completion of the revised import health standard by the start of the new grape-importing season.
- Response to the red imported fire ant incursion – which highlights the issue of whether temporary risk mitigation measures should (or could) be put in place while a detailed risk assessment is under way.

6.23 Import health standards also have to be kept under constant review and, if necessary, the biosecurity risks must be re-analysed when it appears that the risks have changed. This is what happened in 2001, when MAF had to revoke the import health standard for table grapes imported from California as a result of the spread of the glassy-winged sharpshooter and Pierce's disease throughout southern California.

6.24 Also, following the foot and mouth disease outbreak in the UK in 2001, MAF gave priority to amending 95 existing import health standards – standards in the animal group in particular frequently require updating. In these circumstances, planned work (on, for example, new import health standards) may have to be delayed while an urgent review of a previous standard and its supporting risk assessments is undertaken.

6.25 These and other factors have made it difficult for MAF Biosecurity to keep pace with the demand for import health standards. Large backlogs have built up in each of the three groups, as shown in Figure 12 below. Backlogs have also built up in preparing risk assessments, as shown in Figure 13 on the next page.

Figure 12
Backlogs in Issuing Import Health Standards

Group	Currently under development or requested	Completed in 2001-02	Estimated Backlog (years)[1]
Animal	350	111	4.4
Forest	13	4	3.2
Plants	1550	24	64.6

1 This estimate assumes that outstanding standards are a similar size to those being completed, and that the resources required to complete them will remain the same.

Figure 13
Backlogs in Preparing Risk Analyses

Group	Requests Outstanding	Completed in 2001-02	Estimated Backlog (years)[1]
Animal	28	9[2]	2.8
Forest	2	2	1.0
Plants	85	2[3]	42.5

1 This estimate assumes that outstanding risk analyses are a similar size to those being completed, and that the resources to complete them will remain the same.

2 In addition, a number of much simpler risk analyses have been completed for MAF's Agricultural Compounds and Veterinary Medicines Group.

3 In addition, a large number of pest risk categorisations and pest risk assessments have been completed by this group to determine which pests should be subject to full pest risk analyses.

6.26 Figures 12 and 13 show that the backlogs in import health standards and risk analyses are particularly large in the Plants Biosecurity Group. For the purpose of issuing import health standards for plants, MAF sets priorities for dealing with requests according to:

- the length of time since MAF received the request;
- the value of the crop concerned; and
- the potential consequences of any associated pests or diseases.

6.27 Given the number of risk analyses awaiting preparation, it is important that MAF has a sound, transparent method for setting priorities that is consistently applied. We noted one instance where MAF Biosecurity had given precedence to a request over others without following its normal process. MAF officials suggested that this was an exceptional occurrence and we saw no evidence to contradict this view. However, the occurrence reinforces the importance of having a transparent method for setting priorities that applies in every case.

6.28 For 2002-03 MAF received additional funding specifically for risk analyses and import health standards. Despite this increase, MAF Biosecurity is unlikely to be able to clear its backlog of import health standards while at the same time keeping existing standards under review.

6.29 One means of reducing the backlog would be to shorten the risk analysis process. However, MAF officials would need to test any revised process to ensure that the changes:

- have not compromised the quality and integrity of the process; and
- are consistent with New Zealand's obligations under WTO agreements.

6.30 Other options to reduce the backlogs include the re-allocation of resources from within MAF Biosecurity and contracting out some work to other agencies or individuals.

6.31 The current backlogs of risk analyses and import health standards are, in our view, unacceptable because they could compromise biosecurity. For example, the backlog for plant import health standards, and consequential delay in development of risk mitigation measures, increases the likelihood of illegal importation of risk material. In some cases, a delay to an import health standard could be viewed as a restraint on trade.

6.32 Nevertheless, measures to reduce the backlogs need to be carefully considered. MAF needs to strike a difficult balance, especially if it chooses to make resource transfers. More resources to enable new commodities to be imported could be at the expense of other biosecurity activities (such as border control) that are mainly designed to protect New Zealand from the assessed risks associated with commodities that are already coming in.

Recommendations

6.33 MAF Biosecurity should:

- Continue to develop and implement measures to improve inter-group co-ordination and consistency (such as inter-group discussion of approaches to risk analysis).
- Examine options for reducing the backlogs of risk analyses and import health standards, such as contracting out work or greater direct input from would-be importers. Any such measures would need to be carefully assessed and tested to ensure that the integrity of MAF Biosecurity's processes is not compromised.

Inspections at the Border

Key Findings

6.34 Inspections for biosecurity risk material at New Zealand's borders are comprehensive for all pathways except the sea containers pathway, which is both the most difficult to manage and the least well controlled.

6.35 New Zealand conducts biosecurity examinations on a large proportion of mail items and all passengers' baggage that enter the country through recognised entry points.

6.36 In 2001-02 MAF X-rayed just over 50 million incoming international mail items, but this screening excluded approximately 22 million bulk and direct-entry mail items. Most of these items present a relatively low biosecurity risk and MAF treats them as cargo. In addition, there is a large and growing number of courier packages and mail items that enter New Zealand other than through the New Zealand Post international mail pathway. These items could potentially pose a seriously high biosecurity risk, and require suitable systems be in place to deal with the risk.

Relevant Case Studies –
6. Management of risks associated with sea containers.
7. Preparedness for an outbreak of foot and mouth disease.

6.37 MAF Quarantine Service (MAF QS) inspects goods crossing the border. The inspectors check that commodities comply with MAF's import health standards for all possible pest and disease entry pathways – i.e. passengers, vessels, mail, and commercial consignments.

6.38 MAF QS inspections are most visible at international airports, where quarantine officers check passengers and their luggage for products that have been banned or that may contain pests or disease. Less visible to the general public is the work undertaken by quarantine officers at:

- ports visited by international vessels;
- the Auckland International Mail Centre; and
- various overseas locations where people and commodities are inspected before they reach the border – for example, biosecurity clearance of cruise ships and inspections of New Zealand troops and their equipment returning from East Timor.

People Entering the Country

6.39 Nine airports receive international passengers. This is a tightly controlled pathway. In recent years, MAF has introduced major measures, such as X-ray machines and detector dogs, that it assesses have improved the detection of suspect goods:

- Up to 1996, MAF assessed that it was detecting approximately 55% of risk goods brought into the country by passengers arriving at international airports. At that time MAF did not use X-ray machines or detector dogs.
- With the introduction of X-ray machines and detector dogs at Auckland International Airport in 1996 (examining approximately 50% of all baggage) the assessed detection level of suspect goods climbed to between 85% and 95%.
- In March 2001, Cabinet approved funding for a further 11 teams of detector dogs and further installations of soft-tissue X-ray machines. (The funding also paid for a public awareness campaign for foot and mouth disease and to provide veterinary support for the UK foot and mouth disease outbreak.) MAF has assessed that these measures have enabled it to detect almost all suspect goods coming into the country with international passengers.

International Mail

6.40 Since August 1999 MAF has reported that virtually all incoming international mail has been screened by X-ray at the Auckland International Mail Centre, and in many cases also by quarantine detector dog teams. We understand that some other countries are planning to follow our example.

6.41 In the course of our audit we found that approximately 22 million mail items per year arriving at the International Mail Centre are not, in fact, being screened. In 2001-02 MAF reported screening just over 50 million mail items, and that these items encompassed virtually all arriving international mail.[13] However, New Zealand Post's figure for the incoming international mail it handles was 71.8 million items for 2001-02.

13 MAF Biosecurity Authority Border Management Group Annual Statistical Report 1993/94-2001/02.

6.42 The approximately 22 million mail items not screened appear to be mostly in the form of:

- *m-bags* – approximately 120,000 bags of mail a year containing multiple printed matter (magazines, etc.), addressed to a single addressee – MAF considered this mail to be a low biosecurity risk, but the New Zealand Customs Service recently intercepted magazines containing seeds during a random check (since this incident, all bags have been screened, and countries using the service have been reminded that it is intended for printed matter only);
- *bulk mail* – mostly comprising business mail or direct marketing material from known customers who have a direct customer relationship and an operational agreement with New Zealand Post – this mail is not X-rayed, but may be inspected by the New Zealand Customs Service and MAF officials; and
- *direct-entry mail* – which is the same as bulk mail, but the direct customer relationship is held by another postal administration (e.g. Australia Post).

6.43 MAF does not treat either bulk mail or direct-entry mail as international mail. Instead MAF treats it as cargo. Once delivered to the International Mail Centre, the mail is handled according to a compliance agreement between New Zealand Post, MAF and the New Zealand Customs Service. If bulk and direct-entry mail is identified as low risk (as specified in the agreement), it is released for delivery without screening. Mail identified as medium to high risk is screened or inspected by MAF before release. The New Zealand Customs Service may also screen bulk and direct-entry mail, and mail that arrives in m-bags.

6.44 In addition, a large unknown quantity of mail items is brought into the country by freight forwarders and lodged at domestic mail centres or delivered by carriers other than New Zealand Post. This mail is also treated by MAF as cargo. MAF does not have a compliance agreement with these other carriers to ensure that biosecurity risk items are detected.

6.45 Mail that enters through courier companies is a further exception to the screening of "virtually all" international mail. In recent years, the use of courier companies as an alternative to postage through ordinary mail has been increasing. We understand that up to 12 international courier companies are currently operating in New Zealand, and that the number of courier packages brought in by three of the main companies is estimated at over 1.1 million a year. Unlike bulk mail and direct-entry mail, this method may be used for sending a wide range of items, not just printed material. Couriered packages therefore can carry items posing a high biosecurity risk.

6.46 Currently, both MAF and the New Zealand Customs Service rely on manual screening of a manifest (that describes the contents of a consignment of couriered items) to detect risk goods. Unlike international mail received through New Zealand Post, the items are not X-rayed or screened by detector dog teams on a consistent basis.

6.47 Between October and December 2001, MAF Quarantine Service undertook a survey of couriered items in order to analyse and quantify the risk posed by courier cargo for both MAF and the New Zealand Customs Service, and to evaluate the effectiveness and efficiency of the current screening process.

6.48 The survey showed that the manifest screening as currently operated *does not give high detection rates for risk items in courier cargo*, and that *a significant proportion of packages entering New Zealand were not on the flight manifests provided* (so would not be detected without further screening). In addition, *10% of packages had manifest descriptions that did not accurately reflect the contents of the package*.

6.49 The survey concluded that *courier cargo may be more similar to international postal mail* [than cargo]. *Rather than including courier cargo in* [the] *cargo clearance programme, the possibility of screening it in the same way as international postal mail should be considered.*

6.50 MAF has considered a number of options for addressing the risks posed by this pathway, including the suggestion that courier items be treated as mail. It has agreed that manifest screening must be improved, and will now require courier companies to hold back items not included in the manifest until documents are provided and screened. At present, some biosecurity risk items are still being intercepted by the New Zealand Customs Service either by manifest screening or by a mobile X-ray machine that is used to screen couriered items at the courier companies' warehouses on a random basis.

Sea Containers

6.51 It is not practical or possible for MAF to fully inspect all containers – the volume of material imported in sea containers is huge – 410,000 arrived at ports in 2001-02. Sea containers are therefore the least controlled pathway by which unwanted organisms can enter because of the difficulty in identifying and achieving the correct balance between:

- the cost and time it takes to inspect sea containers; and
- the level of biosecurity risk they might pose.

6.52 We therefore decided to include MAF's management of the biosecurity risks associated with sea containers as one of our seven case studies.

6.53 MAF surveys have shown that targeting containers for inspection is more effective than random selection in detecting risk goods and unwanted organisms. It therefore inspects selected containers – currently approximately one-quarter of all arriving sea containers.

6.54 MAF uses a number of risk factors to select containers for inspection. Those that can prompt an inspection include:

- absence of documentation certifying that the container has been cleaned;
- the container's country of origin; and
- the type of goods declared to be inside the container.

6.55 A cleaning certificate attests that a container is free of contamination. However, a significant proportion of certificates (44%) has been found to be inaccurate for wood packaging. MAF is currently reviewing its import health standard for sea containers. The first draft of this review is due in December 2002, and is likely to give a range of options for better targeting of containers for inspection.

Recommendation

6.56 MAF Biosecurity should:

- review its assessment of the risks posed by bulk and direct-entry mail and by other mail items (including couriered items), that are not covered by the compliance agreement with New Zealand Post;
- implement a system to reduce the risks posed by these items that takes account of the assessed relative risks; and
- use information from its current review of sea containers as the basis for examining the level of risk posed by this pathway relative to others, so that an appropriate level of inspections of containers can be established.

Surveillance

Key Findings

6.57 Many of the people we interviewed during this audit considered that judging the appropriate levels of surveillance funding and activity is one of the most difficult and important issues related to the Biosecurity Programme. Many also viewed surveillance as the weakest component of the Programme.

6.58 The sooner pests or diseases are detected after entering the country, the greater the likelihood that they can be eradicated – there is a point in the spread of each pest and disease at which eradication, or even a measure of control, will either not be possible or not be cost-effective.

6.59 Where a decision has been made to avoid a particular pest or disease becoming established, it is vital that the type and level of surveillance undertaken is sufficient to detect the pest or disease early enough to enable cost-effective countermeasures/eradication to be undertaken.

6.60 Historically, there has been a lack of effort to formulate a strategy and set levels and objectives for surveillance to achieve this aim. Clearer goals and outcomes for biosecurity surveillance measures are required.

Relevant Case Studies –

2. *Response to the incursion of the southern saltmarsh mosquito.*
3. *Response to the incursion of the painted apple moth.*
4. *Response to the incursion of the varroa bee mite.*
5. *Response to the incursion of the red imported fire ant.*
7. *Preparedness for an outbreak of foot and mouth disease.*

6.61 While New Zealand is viewed as having among the best border control measures in the world, it is impossible to eliminate all biosecurity risks. One of MAF's key biosecurity roles is to detect those pests and diseases that do manage to enter the country.

6.62 When a pest or disease has entered the country it is vital to detect it early because:

- generally, detection before the pest or disease has spread greatly increases the chances of being able to eradicate it; and

- once it has spread, eradication or even control may no longer be possible or cost-effective.

6.63 Therefore, the success of the Biosecurity Programme depends on surveillance activities that are adequately funded and effective. Successful surveillance also demonstrates to other countries to which New Zealand exports that the country is free from pests and diseases.

6.64 Surveillance involves a wide range of activities and is undertaken by many different people and organisations. Each of the three sector (animal, plants, forest) groups within MAF Biosecurity has its own surveillance programme which provides for:

- standards for surveillance activities;
- purchase of the activities – such as survey design, sample collection, diagnostic services, and reporting – from contractors; and
- audit of the delivery of activities against the standards.

6.65 In addition to the surveillance activities purchased by MAF Biosecurity:

- MoH's Public Health Service operates a surveillance programme for exotic mosquitoes of public health significance;
- DOC operates surveillance programmes for specified established animal and fresh water fish pests, and conducts limited surveillance for new pests and diseases at some high-risk sites (e.g. campsites); and
- Some regional councils and industry groups fund surveillance programmes for pests and diseases relevant to their regions and sectors.

6.66 An important element of surveillance is the role played by the general public in informing MAF and other agencies (such as regional councils) of any unusual insects that they might see. A number of exotic pest incursions – including the southern saltmarsh mosquito, painted apple moth, and Argentine ant – have come to the attention of biosecurity agencies through the vigilance of members of the public.

6.67 Unlike border control capability that has been strengthened over recent years (see paragraphs 4.12 on page 50 and 6.39 on page 92), some of the people we spoke to believe that surveillance capability has become weaker over the same period for a range of reasons – including:

- a reduction in the level of resources applied to surveillance (work done in support of the recent surveillance review indicated that funding for animal disease surveillance has reduced from approximately $8 million to about $5 million a year over the last ten years);

- fragmentation of services, which may have resulted in part from the introduction of contestability (see paragraphs 5.7-5.11 on page 77);
- issues concerning the Votes Biosecurity structure and associated difficulties in co-ordinating and prioritising activities between departments (discussed in paragraphs 4.8-4.39 on pages 48-56); and
- difficulties with co-ordination between central, regional, and industry surveillance.

6.68 Delays in detecting pests or diseases make it more difficult to respond to an incursion, limit the response options available, and make it less likely that a control strategy will be effective. This was clearly illustrated in the case of the varroa bee mite, which is thought to have been present in New Zealand for up to five years before it was detected. Over this period, the resources available for surveillance of the mite were lower than in previous years.

6.69 The Technical Advisory Group established to advise the Minister on the response to the bee mite recommended measures to control and contain its spread in recognition of the fact that, by the time it was detected, eradication was unlikely to succeed. Had the bee mite been detected earlier, eradication may have been a feasible option.

6.70 Overseas experience points to similar consequences of a failure to detect pests or diseases at an early stage. Delays in detecting the presence of the red imported fire ant in Queensland, and foot and mouth disease in the UK, have been responsible for these incursions spreading far more widely than would have been the case had they been detected earlier.

6.71 Surveillance measures designed to detect specific pests and diseases known to pose high risks if they were to enter the country would make the public and industry stakeholders more aware of the pests and diseases, what they or their symptoms look like, and their potential impact on the community.

6.72 However, with the exception of some pests and diseases that are known to pose specific risks to certain parts of the primary production sector (for example, Asian gypsy moth, fruit fly, and foot and mouth disease), there is currently no list of the highest-risk pests and diseases that should be targeted for surveillance.

6.73 In the past, little priority had been given to developing a surveillance strategy, and programme objectives and priorities. A project is currently under way to identify the most serious environmental pests for which surveillance programmes may need to be put in place. And in November 2001, MAF

Biosecurity commissioned a review of biosecurity surveillance programmes operated by government departments.

6.74 The aims of the review were to make recommendations on the efficacy, efficiency, and appropriateness of surveillance programmes designed to:

- detect organisms new to New Zealand;
- monitor established pests and diseases of plants and animals; and
- verify existing plant and animal health situations.

6.75 The review was to develop a framework for prioritising surveillance programmes, and an economic model to help determine appropriate funding levels for surveillance. The review was completed and the report published in September 2002. A copy of the review is available on MAF's web site *(www.maf.govt.nz)*. The results have been used to inform the development of the Biosecurity Strategy.

Recommendation

6.76 MAF Biosecurity should use the information from its recent review to develop a surveillance programme that has clear goals and objectives for its surveillance activities, and in which priorities are determined in a transparent way.

Responding to Incursions

Key Findings

6.77 In paragraphs 4.19-4.39 on pages 51-56 we examined the process for seeking funds for an incursion response and the need to improve it. The response to the incursion of southern saltmarsh mosquito illustrated the problems that can sometimes occur when funding for an incursion response is sought.

6.78 We found inconsistencies in the way that different incursion responses were managed, and we identified a number of important issues that need to be addressed – including:

- management oversight, so that any problems with incursion responses are picked up early;

- the demanding role of the Chief Technical Officers, who require not only sound technical expertise but also high levels of project management and communications skills; and
- inconsistencies in the purpose of Technical Advisory Groups and the ways they operate that reduce the clarity and transparency of the decisions taken and recommendations made at TAG meetings.

6.79 The National Plant Pest Reference Laboratory (NPPRL) does not have dedicated incident control staff with the skills to manage incursion responses. Staff of NPPRL did their best to overcome this shortcoming, but it still adversely affected the NPPRL's management of its component of the response to the painted apple moth incursion.

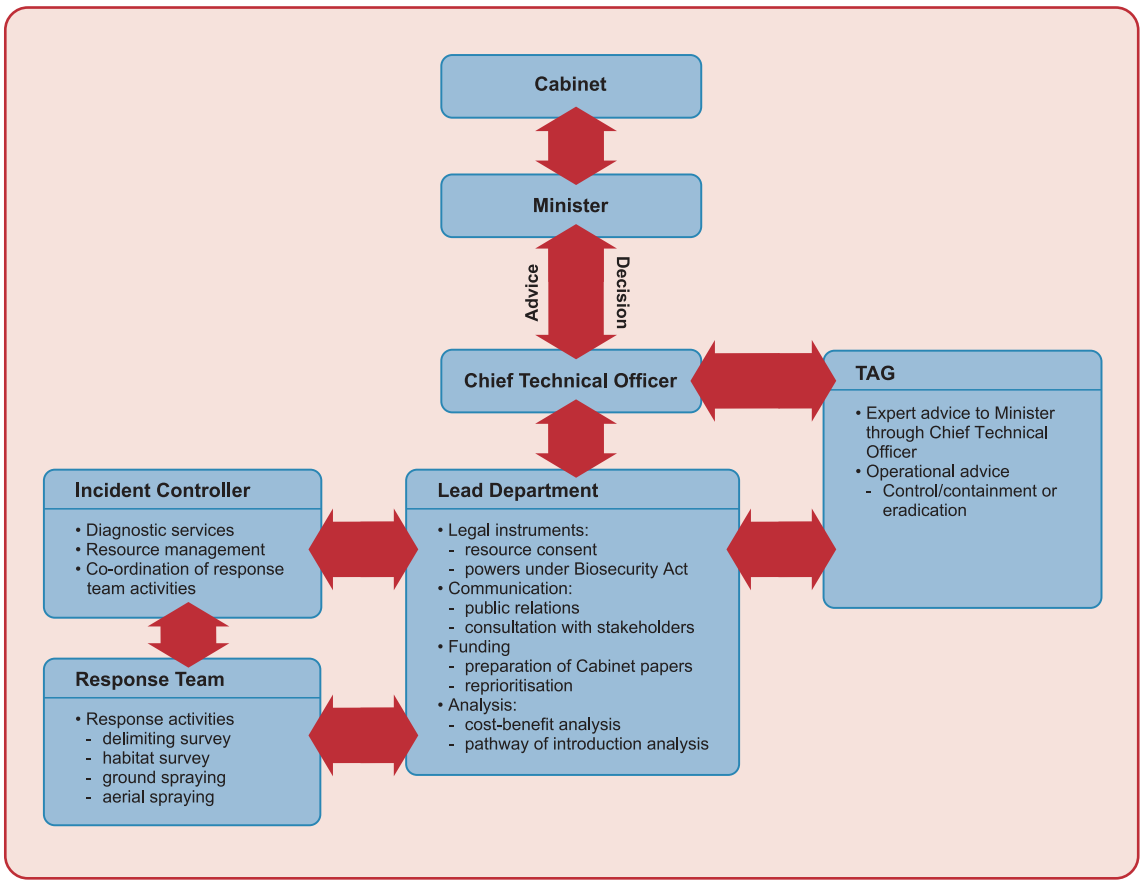
6.80 The inability to transfer large volumes of complex data between response headquarters, incident control facility, and field operations could compromise the management of a major incursion response.

Relevant Case Studies –

2. *Response to the incursion of the southern saltmarsh mosquito.*
3. *Response to the incursion of the painted apple moth.*
4. *Response to the incursion of the varroa bee mite.*
5. *Response to the incursion of the red imported fire ant.*
7. *Preparedness for an outbreak of foot and mouth disease.*

6.81 Figure 14 on the opposite page illustrates the roles and responsibilities of the main people and organisations involved in a pest incursion response. The responsibilities of the lead agency are particularly complex and multi-dimensional.

Figure 14
Roles and Responsibilities in an Incursion Response



6.82 A response to a pest or disease incursion will often pass through different phases – such as from control and containment through to eradication. In some instances, departments have sought funding for a single phase of a response – with the intention of collecting information and preparing advice for the Government on the further action that may be required.

6.83 Funding one phase at a time represents good practice, but only insofar as it does not unduly constrain the response and/or unnecessarily increase the number of separate approaches to obtain funding. The response to the incursion of the southern saltmarsh mosquito illustrated the problems that can sometimes occur when funding for an incursion response is sought.

6.84 The case studies – in particular, the painted apple moth and red imported fire ant – illustrated other differences in the way in which incursion responses are managed. We identified a number of factors that accounted for these differences.

- Until February 2001, MAF did not have an incursion response policy.
- Different Chief Technical Officers (CTOs) took different approaches to their responsibility for the responses we examined.
- There were differences in the operation of the Technical Advisory Groups advising on the responses.
- There is a need to improve management oversight.
- There are shortfalls in the laboratory resources available to deal with the work arising from some responses.
- Some responses are especially dependent on advanced information technology, which is not yet sufficiently developed to support a major incursion response.

Need for an Incursion Response Policy

6.85 Comprehensive emergency response procedures to deal with outbreaks of diseases such as foot and mouth have been in place for some years. However, it was not until February 2001 that MAF issued a *Draft Policy on Responding to an Exotic Organism Incursion* applicable to all sectors for which its CTOs are responsible.

6.86 The purpose of this policy is to ensure that decisions and actions taken in responding to incursions are transparent and consistent. The policy sets out a generic approach to guide decision-making and the development of response programmes for specific organisms.

6.87 MAF successfully tested the policy in responding to the incursion of the red imported fire ant. However, the independent review of MAF's response to the incursion of the painted apple moth recommended that the policy be complemented by a Standard Operating Procedure (SOP), which would list actions to be taken as a guide to formulating an incursion response. In order to ensure that the SOP was applied consistently, CTOs would be required to record any decision to depart from it.

Role of Chief Technical Officers

6.88 The Animal, Plants, and Forest Biosecurity Groups are each headed by a director. The three directors are also MAF's CTOs and, as such, have statutory duties under the Biosecurity Act 1993.

6.89 CTOs must be:

- technically proficient, with appropriate qualifications and experience in their respective sectors;
- scientifically credible to industry and other stakeholders; and
- able to take decisions based on highly technical scientific data.

6.90 These attributes are essential to the role, and should be given considerable weight when new appointments are made. CTOs also require good management skills because overseeing major incursion responses demands:

- expertise in project management;
- a strong ability to communicate effectively, both orally and in writing, to a range of audiences; and
- the skill to manage many different sets of relationships, especially to secure the co-operation of relevant industry groups.

6.91 It is crucial that CTOs have all of these skills – both technical and managerial. MAF's response to the painted apple moth incursion well illustrated the difficulty that will sometimes occur in expecting these complex roles to be fulfilled by one individual.

Operation of Technical Advisory Groups

6.92 When a pest or disease is detected and a response initiated, a Technical Advisory Group (TAG) is established to provide technical advice to the responsible CTO. The ways in which these groups operate are very different – both within MAF and between MAF and MoH.

6.93 While a TAG needs to operate flexibly as appropriate to the requirements of a particular response, a common purpose and core terms of reference for TAGs would help to:

- more clearly define the role of group members; and

- improve communication and understanding between the group, stakeholders, and members of the public, by providing some consistency and link through to overall biosecurity policy.

6.94 The core terms of reference could form the basis of more detailed terms of reference for each TAG, to be agreed at an early meeting.

6.95 The TAGs play a key role in providing expertise and advice to help the Government in taking what can often be controversial decisions – such as to approve aerial spraying with an insecticide or to decline the option to attempt eradication of a pest or disease. Therefore, it is vital that TAG meetings are documented, and particularly that they clearly record what recommendations were made and how they were reached.

Oversight by Senior Management

6.96 At the completion of an incursion response MAF carries out a debriefing review to identify lessons for the future. Furthermore, the Biosecurity Council has agreed that MAF should commission independent reviews for every major incursion response, similar to that undertaken of MAF's response to the painted apple moth.

6.97 While debriefs at the conclusion of each response enable lessons to be learned, we found evidence of the need for the same kind of review during the course of major incursion responses. Such reviews would help senior management to monitor progress with response activities by providing status reports showing achievements against plans.

6.98 MAF's response to the incursion of the painted apple moth illustrates clearly the need for information to support more effective management oversight. MAF took too long to identify problems with its response, thus limiting the options available.

6.99 CTOs have statutory authority to take certain actions to manage incursion responses. This can create uncertainty regarding the oversight role of their manager, the Group Director, MAF Biosecurity.

6.100 In our view, the oversight role of the Group Director would be strengthened if the Director-General, MAF were to delegate to the Group Director the power to direct a statutory officer (in this case, the CTOs) in the exercise of their statutory functions (a more detailed discussion is provided in the Case Studies, pages 70-71). The Group Director would then be clearly mandated to manage the CTOs in their oversight of incursion responses and to ensure that potential problems are identified early and any necessary action taken.

Shortfalls In Laboratory Resources

6.101 MAF uses two reference laboratories to identify exotic organisms and enable it to plan a suitable response:

- the National Centre for Disease Investigation (NCDI); and
- the National Plant Pest Reference Laboratory (NPPRL).

6.102 The NCDI incorporates the New Zealand Animal Health Reference Laboratory and the Exotic Disease Response Centre. Its functions are to:

- diagnose and manage incursions of exotic or emerging pests and diseases, including those affecting the environment; and
- facilitate trade in animals and animal products by delivering accurate and timely information on the health status of New Zealand's animals.

6.103 Within NCDI, staff roles are separated between those assigned to laboratory functions and those involved in the planning and implementation of response management.

6.104 The NPPRL was established in November 1998 to monitor the health status of New Zealand's plants by identifying plant pests and diseases. Two sets of factors are impeding the operations of the laboratory:

- overcrowded conditions – we were informed by MAF that the laboratory does not meet occupational safety and health, molecular biology, or MAF/ERMA quarantine requirements; and
- shortages of staff to deal with growing numbers of incursions, investigate environmental and forest pests, and assume project management responsibilities.

6.105 The workloads of both NCDI and NPPRL have grown substantially in recent years. In addition, there is a limited pool of suitably qualified people in New Zealand to fill positions at both NPPRL and NCDI. We were informed that staff recruitment and retention was an issue for the two laboratories. Staffing requirements at NCDI in the event of a substantial response are considered in the foot and mouth disease case study.

6.106 The additional funding in 2002-03 (see footnote 7 on page 48) includes amounts for sustaining and developing reference laboratory capability. This funding is intended to help relieve the workload pressures faced by NCDI and NPPRL. MAF Biosecurity will be monitoring the impact of the workload of the laboratories, and the extent to which the new funding is enabling the problem to be addressed.

6.107 The separation of staff roles at NCDI between the technical, scientific work and project management roles does not apply at NPPRL. There, the same member of staff can be responsible for both technical work (such as diagnostic work) and project management (such as managing incursion responses and dealing with external enquiries).

6.108 As with the more senior CTO role described in paragraphs 6.88-6.91 on page 103, it can be difficult to find a person suitably qualified to fulfil both of these complex roles.

Information Technology Support

6.109 Effective response programmes require the management and co-ordination of large volumes of data between the response headquarters, the incident control facility, and staff in the field. Because of MAF's need to protect the integrity of its databases, current Information Technology (IT) arrangements do not enable these locations to share data, thereby creating the potential for compromising the successful management of incursion responses.

6.110 MAF Biosecurity has reviewed its IT systems and has additional funding in 2002-03 to develop a new incursions database. It is also examining the use of IT in the management of the UK foot and mouth disease outbreak to identify how future IT needs might best be met. This part of the review has involved looking at ways to optimise the use of the EpiMan software developed by the EpiCentre at Massey University. Elements of the EpiMan software were used in the UK outbreak.

Recommendations

6.111 The main departments should consider whether a wide-ranging review of biosecurity capability (including preparedness for one or more major incursions) is required.

6.112 The Director-General, MAF should consider whether a specific capability review of MAF Biosecurity is required and, if so, how this would feed into a wider review.

6.113 MAF and the other departments responsible for managing pest or disease incursions should:

- ensure that their CTOs have an appropriate mix of management skills and sound technical knowledge;

- ensure that appropriately experienced incident controllers with sufficient resources are used for all important incursion responses;
- agree a common purpose and core terms of reference for TAGs (from which each TAG should agree specific terms of reference at an early meeting);
- ensure that all TAG meetings are comprehensively documented to record discussions and recommendations and how recommendations were reached; and
- develop standard reporting arrangements to enable management oversight of major incursion responses while they are under way.

6.114 The Director-General, MAF should consider delegating to the Group Director, MAF Biosecurity the power to direct a CTO in the exercise of statutory functions.

6.115 MAF Biosecurity should:

- Develop a comprehensive operational checklist to be added to its Incursion Response Policy to help achieve greater consistency in the way incursion responses are managed.
- Ensure that the IT review for major incursion responses is completed as soon as possible and that, while the review is under way, contingency plans are in place to deal with an emergency situation.
- Review the resourcing model used by NCDI to see whether it would be appropriate for adoption by NPPRL. This review should also consider expanding the resources of the existing NCDI group to allow them to provide services to the CTOs Plants and Forest Biosecurity, and also the CTOs in MoH and DOC.
- In conjunction with MAF Operations, work with MAF Corporate Human Resources to identify ways to address staff retention and recruitment at the laboratories.

Control and Containment Measures

Key Finding

6.116 Pest management strategies are complex and costly to produce, and only two have been produced.

Relevant Case Studies –
2. Response to the incursion of the southern saltmarsh mosquito.
3. Response to the incursion of the painted apple moth.

6.117 We looked at the risks posed by imported pests and diseases, not the risks posed by those that are endemic. However, MAF and other organisations (such as regional councils) play an important role in managing endemic pests such as possums. Some of the people we interviewed expressed views about one aspect of the measures to control and contain endemic pests and diseases – pest management strategies. We therefore considered it valuable to reflect these views in our report.

6.118 When a pest or disease has become established, the Biosecurity Act 1993 provides for the drawing up of either a national pest management strategy (by government departments) or a regional pest management strategy (by regional councils) designed to manage or eradicate pests and diseases. Strategies can also be drawn up in collaboration with or separately by industry groups that have an interest in controlling or eradicating the endemic pest or disease.

6.119 National pest management strategies require approval by the Minister for Biosecurity, who seeks advice from MAF as to the soundness, feasibility and cost of a proposed strategy. Other ministers (such as the Minister of Agriculture) can also propose or notify national pest management strategies that relate to their responsibilities.

6.120 Drawing up a national pest management strategy can be a time-consuming, complex, and costly process. At the time of writing this report, only two such strategies have been prepared – one for bovine tuberculosis control and the other for American foulbrood (a disease of bees).

6.121 A national pest management strategy is being developed for the varroa bee mite. Another, started by MoH for exotic mosquitoes of public health significance, was abandoned when the Associate Minister for Biosecurity agreed that the resources being used to draw up the strategy could be better used on other aspects of exotic mosquito management.

6.122 Of the 33 recommendations made in the independent review of the response to the painted apple moth, the only recommendation not to have been accepted and acted upon by MAF was to develop a pest management strategy for the moth. As with exotic mosquitoes, MAF felt that the resources required to do so would be better used on other response measures.

6.123 Because of the difficulties associated with preparing and obtaining approval for National Pest Management Strategies, departments have chosen to use administrative powers in the Biosecurity Act in order to respond to particular incursions without recourse to a strategy. This approach was criticised in the painted apple moth review, and by an earlier review of the response to an incursion of the white spotted tussock moth.

6.124 On the basis of views expressed to us, and in the light of the clear difficulties with preparation, MAF Biosecurity might consider conducting a review of the procedures required for the preparation and approval of National Pest Management Strategies. Such a review could usefully focus on how to create the strategies as a more practical tool for responding to pest incursions.

Education and Enforcement

Key Findings

6.125 MAF has a range of programmes and activities to help increase and maintain awareness of biosecurity threats and what can be done to minimise them. It has started to use surveys to evaluate the effectiveness of these programmes and activities. The surveys are also providing useful information on high-risk groups and public attitudes to biosecurity measures such as aerial spraying.

6.126 In the 12 months to 30 June 2002, 9630 infringement notices were issued, of which 91% were paid within the specified period.

6.127 Calls have been made for importers to pay instant fines for failure to comply with biosecurity import requirements for containers. The Ministry of Justice has told MAF that such fines would be inappropriate. The lack of instant fines is partly balanced by a requirement for importers to pay for inspection, and for any subsequent cleaning of containers found to be contaminated.

Relevant Case Studies –
6. Management of risks associated with sea containers.
7. Preparedness for an outbreak of foot and mouth disease.

Educating People and Industries About Biosecurity Risks

6.128 When people and industries are aware of the potential dangers from risk goods entering the country, they are more likely to comply with biosecurity requirements. Public and industry awareness is crucial to minimising the risks to New Zealand's biodiversity and the primary production sector.

6.129 Members of the public initially alerted the two departments concerned (MAF and MoH) to the presence of the southern saltmarsh mosquito, the painted apple moth, and the red imported fire ant. All three pests were detected at a stage when eradication was feasible. These cases highlight the benefits of public education on biosecurity issues, and demonstrate the importance of having an ongoing biosecurity awareness campaign.

6.130 The response to the painted apple moth incursion illustrated the need for early consultation with communities – community concerns, particularly in respect of aerial spraying, needed to be addressed. In such situations, early and well-managed engagement with the public is important in establishing constructive relationships with communities to explain and overcome difficult and complex issues.

6.131 MAF undertakes a variety of activities to raise general awareness of biosecurity. For example, it has:

- entered into arrangements with overseas authorities whereby people wishing to export goods to New Zealand are informed of requirements of the relevant import health standard that must be met before the goods can enter the country; and
- arranged for multilingual brochures and in-flight videos to be shown to arriving passengers informing them of their biosecurity obligations.

6.132 Following the outbreak of foot and mouth disease in the UK, MAF launched a Biosecurity Awareness programme called *Stop Foot and Mouth by Word of Mouth*. The programme involved the distribution of pamphlets and posters that explained what would happen in the event of an outbreak of the disease in New Zealand, and how the risk of an outbreak could be reduced. MAF also ran a television advertising campaign to warn against the dangers of the disease.

6.133 In addition, in September 2001 MAF launched a national publicly funded programme – *Protect New Zealand* – to raise awareness of biosecurity issues in general. This programme has involved television advertisements to raise general awareness and the launch of a web site informing people of biosecurity risks and measures to reduce these risks.

Protect New Zealand
Tiakina Aotearoa

6.134 The *Protect New Zealand* programme also includes measures targeted at particular groups in the community – such as garden centres, people living near ports of entry, importers, and people working with cargo. For example, MAF distributed a fact sheet on the red imported fire ant to people thought most likely to detect the ant, such as people working in garden centres.

6.135 All port, airport, and devanning site[14] staff play an important role in the detection of biosecurity risks by being alert to the presence of exotic pests and diseases as they perform their daily activities. The current targeted awareness campaign should include all such staff.

6.136 There is a danger that some high-risk groups may be missed by the current campaign. One example is people who keep, or people who visit relatives who keep, small numbers of their own pigs mainly fed on scraps. For instance, if meat infected with foot and mouth disease were illegally brought into New Zealand and fed to pigs as food waste (as is thought to have happened in the UK foot and mouth disease outbreak), an outbreak of foot and mouth disease could result.

6.137 Even so, feeding of food waste in this way to pigs is not regulated in New Zealand. Previous regulations were repealed in 1998, because they were found to be costly and difficult to administer, and were a low priority in the Biosecurity Programme. However, MAF has identified the feeding of illegally imported animal products to pigs as one of the most likely pathways by which foot and mouth disease could enter the country, and MAF is now reviewing the feeding of food waste to pigs.

14 A "devanning site" is where containers are taken to be unpacked.

Measuring the Effectiveness of Awareness Campaigns

6.138 In late-2001, MAF commissioned a survey to assess the public's awareness of biosecurity issues with a view to:

- identifying risk areas that required more focused effort; and
- providing a benchmark for future campaigns.

6.139 The survey identified low levels of awareness. For example:

- about half the people surveyed did not know what "biosecurity" meant;
- only 60% of people recognised fruit and vegetables as risk goods, and only 6% identified camping and tramping gear as a risk to biosecurity; and
- one in four people were aware of the exotic pest and disease hotline (though this was better than before the UK foot and mouth outbreak, when the hotline was virtually unknown).

6.140 Furthermore, 90% of people said they would contact an official agency to isolate or destroy articles they suspected were risk goods.

6.141 The survey results indicated the need to intensify education and awareness of biosecurity issues, the risks, and their importance for the country. MAF has been given additional funding in 2002-03 to continue and strengthen the biosecurity awareness programme.

6.142 MAF has identified some groups of people – such as those from countries where foot and mouth disease is widespread and where English is not the first language – as being high-risk because of their relative lack of knowledge about biosecurity issues. A specific media campaign will target these groups.

6.143 In addition to the 2001 survey, MAF recently surveyed 800 residents in the West Auckland area – where it was carrying out spraying to eradicate the painted apple moth – to identify levels of awareness about the spray programme, views on aerial spraying, and any concerns the residents had. The survey indicated that the majority of residents supported the eradication programme, and that 64% had no concerns about it.

Enforcing Biosecurity Regulations

6.144 Two branches of MAF deal with enforcement of biosecurity regulations:

- The **Quarantine Service Enforcement Group** issues infringement notices (instant fines). In the 12 months since the infringement notice regime was introduced in June 2001, the group issued 9406 notices to people who failed to declare risk goods at airports across the country.
- The **MAF Special Investigation Group** has 22 staff who deal with MAF's enforcement work relating to biosecurity, animal welfare and, prior to the establishment of the Food Safety Authority, food assurance. In the year to 30 June 2000, the group responded to 3000 incidents, of which 293 related to complaints under and breaches of the Biosecurity Act 1993.

6.145 In our 1994 report on *Controls to Prevent the Entry of Fruit Fly into New Zealand* we recommended that MAF seek authority to impose instant fines.[15] We made this recommendation on the basis that the fines would act as a deterrent to people who might otherwise bring biosecurity risk goods into the country. A number of other countries such as Australia, Canada and the United States have similar arrangements.

6.146 MAF acted on our recommendation, but it took until June 2001 for instant fines to be introduced. MAF told us there were two reasons for the delay:

- Lack of resources to introduce the instant fines system.
- A legal issue, in that, until the Biosecurity Act was amended in May 1999, anyone who would have been issued with an instant fine would also have received a criminal conviction. This was felt to be unacceptable in situations where negligence (rather than a deliberate act) was the cause of an incoming passenger being found to possess undeclared risk goods.

6.147 As the legal issue was addressed in 1999, it appears that lack of resources was the primary reason for delaying the introduction of instant fines until June 2001.

6.148 From June 2001, passengers arriving who fail to declare quarantine items on their declaration forms are issued with an infringement notice and are liable to pay a fine of $200. The offence is one of strict liability, which means that anyone failing to declare items (whether they act deliberately or accidentally) is liable to the instant fine. The fine must be paid at the time the notice is issued or within 14 days of the date of issue.

15 *Third Report for 1994*, parliamentary paper B.29[94c], pages 87-108.

6.149 If the failure to declare is deliberate, more serious penalties are also available under the Biosecurity Act. Where people are found deliberately attempting to smuggle prohibited goods, and where it can be proven that a false declaration has been made, a maximum penalty of up to five years in prison and $100,000 in fines can be imposed by the court.

6.150 MAF Biosecurity received an appropriation of $1.2 million and the Department for Courts received $0.7 million to introduce and operate the infringement notice regime. In mid-December 2001, the number of notices issued each week was 220 – although this rate was expected to drop as awareness of, and compliance with, biosecurity requirements increased.

6.151 It is difficult to measure the success of the infringement notice regime. MAF QS staff attempt to do so by monitoring the number of non-declared risk items seized. The number of items seized dropped by 3.5% in the first six months after instant fines were introduced.

6.152 MAF Biosecurity is currently undertaking a review of the infringement notice regime. The report is currently in draft form. The review is assessing whether the regime:

- improves compliance with biosecurity requirements;
- treats all incoming passengers fairly; and
- is given adequate resources.

6.153 Sea containers present a high-risk pathway through which several pests may have entered the country in recent years. There have been calls to introduce instant fines for failure to comply with biosecurity import requirements for containers. However, the Ministry of Justice has told MAF that to introduce such fines would be inappropriate, because importers have no control over the state of the containers they import, nor over the process by which they are packed.

6.154 There is a different financial incentive for importers to do whatever they can – such as by liaison with their agents overseas – to ensure that the containers they import are free from biosecurity risk material. The incentive is the requirement for importers to pay for inspection, and for any subsequent cleaning of containers found to be unacceptable.

Recommendation

6.155 MAF should ensure that its awareness campaigns include sufficient measures targeted at high-risk groups and locations.

Research

Key Finding

6.156 Priorities for and co-ordination of biosecurity-related research need to be better managed. We understand that this is to be addressed in the Biosecurity Strategy.

6.157 None of the seven case studies directly raised the subject of biosecurity research and we have not, therefore, examined it in depth. We discuss research only on the basis of the comments received by the Biosecurity Strategy Development Team.

6.158 Scientific research plays an essential role in managing biosecurity risks. Research is required to:

- continuously improve and update knowledge of biosecurity risks;
- develop more effective preventative measures and surveillance; and
- respond appropriately to incursions.

6.159 Information received by the Biosecurity Strategy Development Team has indicated that biosecurity-related research is dispersed across a number of Crown Research Institutes and needs to be better prioritised and co-ordinated.

6.160 In August 2000, MAF Biosecurity released a document outlining areas for biosecurity research, and the principles and objectives for biosecurity-related research in New Zealand. It did not, however, prioritise the areas for research.

6.161 We understand that these issues will be addressed in the Biosecurity Strategy, due to be launched in 2003. In our view, the co-ordination and prioritisation of research might be an appropriate role for the Biosecurity Council.

Recommendation

6.162 Consideration should be given to the Biosecurity Council taking on the role of co-ordinating and prioritising biosecurity-related research. This task might best be undertaken by the Council's Technical Forum.

Appendices

Appendix 1

Glossary of Technical Terms

Appropriate level of protection: The overall level of protection against biosecurity threats sought by a WTO member through its biosecurity system. It is also called the "acceptable level of risk". Any statement of appropriate level of protection does not have to be made in quantitative terms. The biosecurity measures used to achieve the desired appropriate level of protection must be based on science that is consistent, technically justifiable and transparent.

Containment: The application of a treatment agent to reduce the numbers and help limit the further spread of a pest.

Control: Measures to monitor an organism's numbers and spread and respond if the organism reaches set boundaries.

Delimiting survey: A survey to determine the extent and distribution of an organism.

Endemic: An organism is endemic if it is established throughout or in any part of the country. Both native and introduced organisms can be endemic.

Eradication: Measures to rid New Zealand of a pest.

Established: An organism is established if it will remain in the country for the foreseeable future.

Exotic disease: A disease that is not regularly found among people or animals in New Zealand.

Exotic pest: A pest that is not established in any part of New Zealand.

Import health standard: Specifications with which a country's export certification system must comply. One of the first lines of defence against unwanted pests and diseases.

Incursion: Entry and establishment of a pest not previously known to be established in New Zealand.

Interception: The discovery of an exotic pest at or before the border.

APPENDIX 1

Organism: Any type of species including fish, animal, plant and seeds.

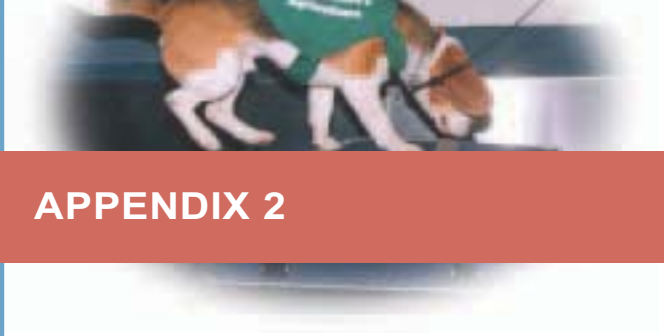
Pathway: The way in which an exotic pest or disease may be transported into the country. Pathways include goods, the material in which goods are packaged, containers, luggage, aircraft and vessels, and natural pathways such as wind and the sea.

Pest: Any noxious or destructive species of plant or animal.

Primary Production Sector: Industries within this sector are agriculture, horticulture, viticulture, forestry, and fisheries.

Regulated Pest: A pest for which phytosanitary measures would be taken if it were intercepted/detected.

Sanitary and Phytosanitary Measure: Any officially prescribed method for performing inspections, tests, surveys, or treatment in connection with regulated pests.



Appendix 2

Summary of World Trade Organisation (WTO) Agreement on the Application of Sanitary and Phytosanitary Measures (SPS Agreement)

The SPS Agreement confirms the rights of WTO member countries to protect the health of their people, animals, and plants, and sets out rules by which this can be done while facilitating trade. Members have the right to protect the life and health of their human, animal, and plant populations, provided the measures taken are consistent with the SPS Agreement.

The fundamental principles of the SPS agreement are set out as 'basic rights and obligations', and state that:

- National sovereignty is preserved. WTO members have the right to protect their human, animal, or plant health, but only if the way they achieve this protection is consistent with the SPS Agreement.
- SPS measures must be necessary, based on scientific principles, and not maintained without scientific evidence.
- WTO members must not use SPS measures to discriminate between WTO member countries, and between imported and domestically produced goods.
- SPS measures that are consistent with the SPS Agreement are presumed to be consistent with GATT (General Agreement on Tariffs and Trade) 1994.
- SPS measures that can be required by an importing country (which in New Zealand are specified in import health standards) may include treatment, inspection and certification prior to export, and inspection, treatment or quarantine on arrival. WTO members are obliged to ensure that their sanitary or phytosanitary measures are based on an assessment of risks, (which in New Zealand is called 'risk analysis'). For an SPS measure to be based on a risk assessment there has to be a 'rational relationship' between the SPS measure and the risk assessment.

The SPS Agreement defines risk assessment as – *the evaluation of the likelihood of entry, establishment or spread of a pest or disease within the territory of an importing Member [country] according to the sanitary or phytosanitary measures which might be applied, and of the associated potential biological and economic consequences; ...*

The SPS Agreement sets out the factors to be taken into account when assessing the risks of particular pests or diseases potentially associated with importation of a particular product. These factors include the potential loss of production or sales, and the costs of any control or eradication measures.

Further information on the SPS Agreement can be found on both the WTO and MAF web sites: *www.wto.org* and *www.maf.govt.nz*

Appendix 3

Organisations We Contacted During the Audit

Ministry of Agriculture and Forestry

- We interviewed senior managers and national advisers within MAF Biosecurity and MAF Operations.
- We also consulted staff from companies contracted by MAF Biosecurity to work on responses to pest incursions.

Ministry of Health

- We interviewed staff in the Public Health Directorate who have biosecurity responsibilities.
- We also consulted staff from the company and public health services contracted by MoH to work on the response to the southern saltmarsh mosquito incursion.

Department of Conservation

- We interviewed the staff with biosecurity responsibilities.

Other Public Sector Agencies and People

We also consulted with a wide range of organisations as outlined below:

- the Ministry of Foreign Affairs and Trade;
- the State Services Commission;
- the Treasury;

- the Department of the Prime Minister and Cabinet;
- New Zealand Post Limited;
- New Zealand Customs Service;
- Auckland District Health Board;
- Tairawhiti District Health Board;
- Auckland Regional Council;
- Wellington Regional Council;
- Gisborne District Council;
- New Zealand Forest Research Institute Limited;
- Agriquality New Zealand Limited;
- the Chairperson of the Biosecurity Council; and
- the Project Manager of the Biosecurity Strategy Development Team.

Industry and Interest Groups

We consulted the following industry and interest groups:

- New Zealand Forest Owners Association Inc;
- New Zealand Vegetable and Potato Growers Federation Inc;
- Federated Framers of New Zealand Inc;
- Wine Growers of New Zealand;
- Poultry Industry Association of New Zealand Inc;
- National Beekeepers' Association of New Zealand;
- Royal Forest and Bird Protection Society of New Zealand Inc;
- New Zealand Biosecure Limited;
- Flybusters; and
- Californian Table Grape Commission.

APPENDIX 3

Overseas Organisations and People

- Department of Agriculture, Fisheries and Forestry, Australia – including Biosecurity Australia, and the Australian Quarantine and Inspection Service;
- Department of Primary Industries, Queensland – including the Fire Ant Control Centre, Brisbane;
- Department of Agriculture, Animal and Plant Health Inspection Service, USA; and
- Professor of Entymology, Texas A & M University, USA.

Ministry of Agriculture and Forestry: Management of Biosecurity Risks

Controller and Auditor-General

Tumuaki o te Mana Arotake

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