

# Exercise Taurus and Operation Waiheke

*Lessons learned during a simulation exercise and a response to a suspected outbreak of foot-and-mouth disease*



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## Executive Summary

Exercise Taurus and Operation Waiheke ('the operations') tested the Ministry of Agriculture and Forestry's (MAF) ability to respond to a major exotic disease outbreak such as foot-and-mouth disease (FMD). Both operations were successful in the sense that their objectives were met and MAF's existing emergency response systems performed well. Exercise Taurus and Operation Waiheke have been reviewed in order to help MAF strengthen future responses and ensure that its emergency response systems continuously improve.

A number of significant issues, or lessons, were identified during analysis of the operations. These include: a need to improve some aspects of the organisational structure of the response; a need for closer stakeholder liaison, particularly with industry; a need for more preparedness material; weaknesses in communications and media management; inadequate animal population and movement data; serious doubts regarding the sustainability of a longer operation; and a lack of focus on recovery.

These issues are discussed in detail below, along with recommendations to address them. Because FMD is a low risk, high consequence disease, it is beneficial to consider the lessons learned from both operations in terms of MAF's generic incursion response system, which is currently under review.

The fundamental message arising from both operations is that MAF must improve its preparedness for and ability to respond to a major exotic disease outbreak. MAF currently does not have the resources or funding to complete this work. A budget initiative has been prepared for 2006/2007 to address some aspects of this shortage.

## Lessons learned – main themes

Both Exercise Taurus and Operation Waiheke provided MAF and other government agencies and industry groups with a wider appreciation of the serious and wide-ranging implications of a full outbreak of FMD. A number of themes emerged during both operations, indicating that further work is required to address the following:

### **1. Preparedness: Organisational structure of response**

The new National Response Centre (NRC) structure has improved MAF's emergency pest and disease response procedures, but more clarity is required. Questions were raised about the decision-making processes and the potential disconnect between the different tiers of response i.e. Officials Domestic and External Security Coordination (ODESC) and Watch Group/ NRC Steering Group/ NRC teams/EDRC/ field operations. Overall, the steering group structure was effective, but should maintain its focus on governance rather than technical decisions. The whole-of-government<sup>1</sup> coordination arrangements worked well but can be improved upon.

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<sup>1</sup> 'Whole-of-government' means government agencies working together to achieve a shared goal and an integrated government response to particular issues. This approach can include policy development, program management and service delivery.

## **2. Preparedness: Stakeholder liaison, particularly with industry**

Closer liaison and policy consultation is needed with industry, particularly in relation to the compensation and recovery phases. Industry plays a vital role during a response; it can provide important technical expertise and has its own communications network to its overseas partners. The operations also emphasised the breadth of interest of government departments in FMD and drew some criticisms that closer liaison is needed with government departments, in particular Police, Defence and Customs for operational aspects of the response.

## **3. Preparedness: Pre-prepared material**

Every component of MAF's emergency pest and disease response structure requires a greater level of preparedness. Every group should update and further develop its pre-prepared material (e.g. communication statements, stakeholder lists, process templates, legal authorities and expected policy statements) and make this material readily available across MAF's response structure. Contingency planning is very important; important policies such as the use of national standstill as an FMD control measure should be developed in advance.

## **4. Preparedness: Communications and media management**

The operations highlighted the need for improved communications during a response, both internally and externally. Internally, 'real-time' information is needed at all response sites to keep staff up-to-date with decisions and actions taken, as circumstances can evolve rapidly during a response and staff not 'in the loop' can quickly get out of touch. Liaison between the sites is crucial, as are clear reporting lines within the NRC structure. Externally, more pre-prepared material is needed for immediate release to avoid rumours. Communications to the media, other government agencies and Ministers must be consistent and proactive.

## **5. Preparedness: Availability of animal population and movement data**

The identification and locality of all farm animals, particularly on small lifestyle blocks, was an identified deficiency during Operation Waiheke. MAF currently relies on AgriQuality Limited's database (AgriBase), which has a primary focus on cattle and deer and has never been adequately extended to cover non-commercial farms or lifestyle blocks. There is currently no national database that provides full coverage for the speedy contact of all rural landowners or tracing of animals; this significantly weakens MAF's ability to respond to disease outbreaks, and increases reliance on casing during response events.

## **6. Response: Sustainability of a longer operation**

It is unlikely that MAF could sustain an ongoing campaign for a significant emergency pest and disease response ('response') with current staff resources. During the operations, most of the response sites<sup>2</sup> were under-resourced and lacked a second and third roster. MAF needs enough trained staff available to step in during a long-running disease outbreak, systems to ensure appropriate induction, training and

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<sup>2</sup> 'Response sites' mean the NRC Steering Group, NRC teams (including Biosecurity New Zealand and New Zealand Food Safety Authority), the Exotic Disease Response Centre (EDRC) and the Field Operations Response Team (FORT).

ongoing management of those staff in an operation involving shifts, and human resource support. Access to experienced staff is also vital; during both operations, senior MAF players were overstretched and, in some cases, the clearance of tasks requiring approval was impeded by a lack of access to key personnel.

#### **7. Recovery phase, including compensation**

Neither operation tested MAF's ability to manage the recovery phase of an FMD response. Linkages to farmer welfare and recovery support networks need to be investigated and probably strengthened. Compensation process design work is also needed to ensure that MAF can administer and verify compensation claims in a large response, and to manage industry expectations.

**Main finding: MAF must continue to enhance its preparedness for, and ability to respond to, a major exotic disease outbreak such as FMD, as part of its work programme.**

## **Recommendations**

The recommendations summarised on the following pages are discussed in detail further in the report. Note that these recommendations are not arranged in hierarchical order, rather in the order that they appear in the text of the report.

Significant reviews are currently underway across MAF into a number of the components of emergency response. Biosecurity New Zealand is reviewing its incursion response policies, the New Zealand Food Safety Authority (NZFSA) is reviewing its governance arrangements, Corporate Communications is reviewing its emergency response procedures, and MAF Policy is reviewing its recovery management arrangements. The outcomes of these reviews will have implications for the MAF system-wide recommendations made in this paper. Work on the relevant recommendations (i.e. recommendations 1, 2 and 4) should therefore not begin until the reviews are completed. The redesign of the MAF-wide emergency response NRC procedures can then be built on the learning from the component reviews. The NRC procedures are discussed in more detail below on page 9.

**It is recommended that the NRC Steering Group endorse the recommendations below, noting that the MAF-wide system recommendations (i.e. numbers 1, 2 and 4) should not be implemented until the MAF business groups have completed their emergency response reviews**

1	<p>MAF should investigate whether its existing NRC team structures can be made CIMS<sup>3</sup>-based or compatible where this results in more effective interfaces with other agencies in a response.</p> <p><i>LEAD: NRC Steering Group. Business Units to reflect in their work programme reviews.</i></p>
2	<p>MAF should amend the NRC structure so that the policy unit of the branch leading a response supports the NRC by taking an overall coordination role in preparing ministerial and other briefings and minutes of meetings, while also providing advice to its business unit.</p> <p><i>LEAD: NRC Steering Group. Business Units to reflect in their work programme reviews.</i></p>
3	<p>MAF should review which parts of its operations should be based at the National Crisis Management Centre (NCCMC) facilities in the Beehive, and which should be based at MAF premises, during a response.</p> <p><i>Business Units to reflect in their work programme reviews.</i></p>
4	<p>MAF should ensure the NRC role descriptions clearly describe the differences between technical and management roles to ensure that the technical and managerial inputs required of those roles are appropriate.</p> <p><i>LEAD: NRC Steering Group. Business Units to reflect in their work programme reviews.</i></p>
5	<p>MAF should continue to strengthen its relationships with all relevant government agencies and regional councils, focusing particularly on the protocols and linkages that need to be in place before an emergency pest and disease response (links back to recommendation 1).</p> <p><i>Business Units to reflect in system design and response planning work.</i></p>
6	<p>MAF should continue to build stronger relationships with industry, to:</p> <ul style="list-style-type: none"> <li>• improve its understanding of industry drivers regarding compensation, recovery and system stability, and</li> <li>• encourage industry to understand its own roles and responsibilities for e.g. meat processing, milk collection, slaughterhouse availability, carcass disposal, and on-farm biosecurity measures such as the preparation of site EDPR plans.</li> </ul> <p><i>Business Units to reflect in system design and response planning work.</i></p>

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<sup>3</sup> Coordinated Incident Management System

7	<p>Each of the four NRC teams should develop a work programme (including, for example, technical plans, pre-prepared material and templates) and dedicate resources to complete preparedness work required.</p> <p><i>Business Units to reflect in system design and response planning work.</i></p>
8	<p>MAF, in consultation with its biosecurity stakeholders, should develop and implement a communications strategy for emergency response that is reviewed and updated regularly. Communication arrangements, including staffing resources, and the contacts data base should be refined and updated regularly.</p> <p><i>LEAD: Corporate Communications</i></p>
9	<p>MAF should develop systems to ensure rapid and accurate transmission of information between field operatives and decision-makers at the NRC. Liaison officers should be used to improve information flows between the response sites and with affected industry groups. General staff familiarity of the daily routines at the response sites should be increased.</p> <p><i>LEAD: Corporate Communications. Business Units to reflect in system design and response planning work.</i></p>
10	<p>Casing data: MAF should establish the specifications and cost estimates required for comprehensive coverage in an enhanced farms database. This information could be built into existing systems (i.e. AgriBase). Robust methods should be developed that can migrate any incomplete data into new systems.</p> <p><i>LEAD: Biosecurity New Zealand.</i></p>
11	<p>Movement data: MAF should continue to work with its biosecurity stakeholders to develop a national livestock identification system for all FMD susceptible species, which can rapidly and accurately trace animals, and which is linked to the enhanced farms database (see Recommendation 10).</p> <p><i>LEAD: MAF Policy.</i></p>
12	<p>Each of the four NRC teams should add any logistics needs to its preparedness work programme.</p> <p><i>Business Units to reflect in system design and response planning work.</i></p>
13	<p>MAF should ensure there is an adequate level of trained emergency response personnel, including specialised scientific staff, to be able to participate in a sustained emergency response, and build this into response plans. This involves working in partnership with all biosecurity agencies and stakeholder groups.</p> <p><i>Business Units to reflect in system design and response planning work.</i></p>

14	<p>MAF should review current response standards and procedures (such as the 153 Standard) as part of its work programme to ensure that all specified requirements are adequately resourced and scale-up processes are identified.</p> <p><i>Business Units to reflect in system design and response planning work.</i></p>
15	<p>MAF should develop an on-going training programme that includes regular simulations such as Exercise Taurus. Any training should be applicable to all types of emergency pest and disease response. This should involve others from industry and other government departments.</p> <p><i>LEAD: NZFSA and Biosecurity New Zealand (for respective simulation programmes).</i></p>
16	<p>MAF should continue to develop a system to enable training of potential additional response personnel during a response ('just-in-time training').</p> <p><i>Business Units to reflect in system design and response planning work.</i></p>
17	<p>MAF should provide potential role-holders with a training programme that enables them to 'up-scale' to emergency management roles during a major response. This training is in addition to any simulations.</p> <p><i>Business Units to reflect in system design and response planning work.</i></p>
18	<p>MAF should continue its work on developing recovery policy during a biosecurity incursion event. Stronger linkages between Biosecurity New Zealand and MAF Policy should also be maintained between all response, compensation and recovery policy development to ensure a co-ordinated approach.</p> <p><i>LEAD: MAF Policy</i></p>
19	<p>MAF should further strengthen its links with existing emergency relief and recovery networks that can help reduce the potential social and economic impacts of an FMD outbreak.</p> <p><i>LEAD: MAF Policy</i></p>

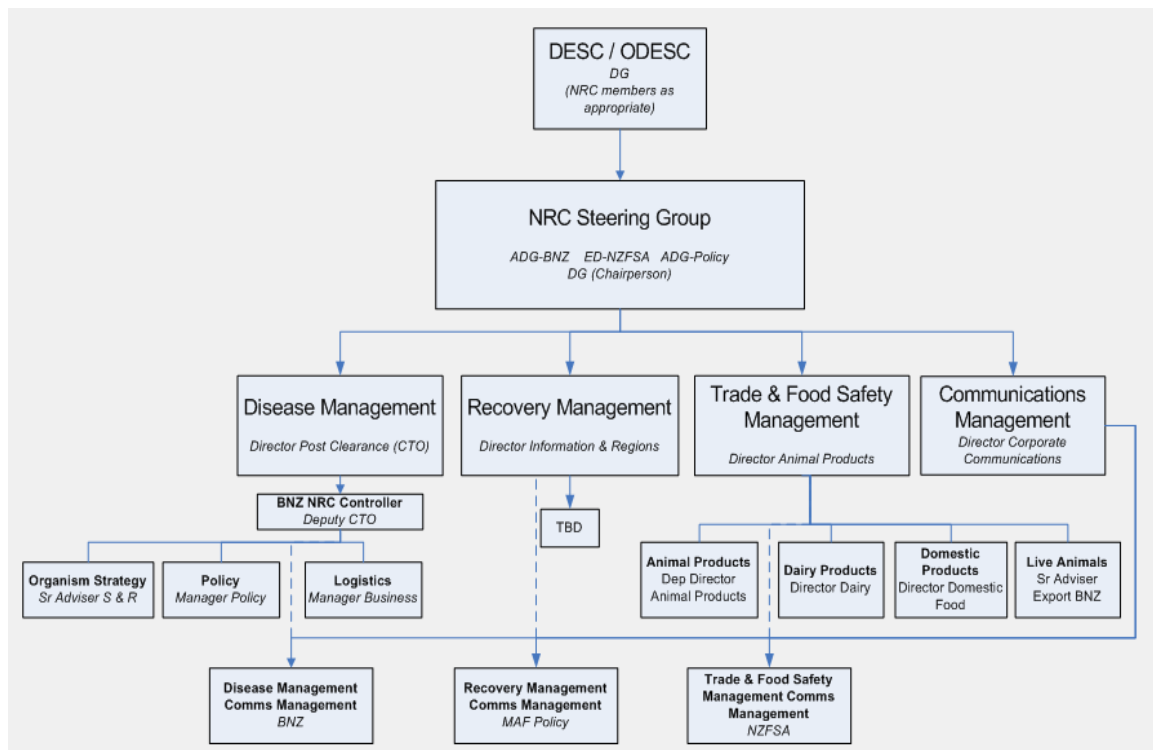
# Introduction

Foot-and-mouth disease (FMD) is endemic in many parts of the world, and would have a devastating impact on New Zealand's economy if it made its way to this country. An outbreak of the disease would seriously damage New Zealand's agricultural sector and have major implications for many other sectors, including tourism. The trade impacts and the associated macro-economic implications of FMD have been estimated by the Reserve Bank of New Zealand to be in the order of \$6 billion cumulative loss to GDP after one year and \$10 billion after two years.<sup>4</sup>

One of the aims of Exercise Taurus, an FMD simulation exercise, was to 'improve coordination across government for dealing with emergency exotic animal disease outbreaks'. Exercise Taurus was closely followed by Operation Waiheke, an actual response to a potential FMD outbreak, giving MAF and its biosecurity partners a further opportunity to test the new emergency response, or NRC, structure (illustrated below).

The NRC structure was created by MAF when the government initiated the Domestic and External Security Coordination (DESC) system. It is designed to be used in situations where a whole-of-government response is required, or where more than one part of MAF is involved in an emergency response.

*MAF's National Response Centre structure*



<sup>4</sup> Reserve Bank of New Zealand and the Treasury. The macro-economic impacts of a foot-and-mouth disease outbreak. 27 September 2002.

## Exercise Taurus – background

MAF held a major FMD simulation exercise during March and April 2005. The exercise comprised three parts:

1. ‘Exercise Taurus – EDRC’: A full-scale operational level simulation testing New Zealand’s on-ground resources at the Exotic Disease Response Centre (EDRC) and the Field Operations Response Team (FORT). It took place on 14 -18 March 2005.
2. ‘Exercise Taurus – NRC’: A simulation of the work that would be undertaken during an FMD emergency at the NRC, located in the Emergency Crisis Management Centre in the Beehive basement in Wellington. This involved the whole-of-government’s response under Government’s crisis management model. It took place on 12 -13 April 2005.
3. Air curtain trial: Trialing of an air curtain incinerator that disposes of carcasses using high temperature incineration. The trial took place in the Waikato region during the week of 11 - 15 April 2005.

‘Exercise Taurus – EDRC’ allowed MAF to test its field operations during ‘week three’ of a simulated disease outbreak. The response teams simulated management of the back-log of infected places from the previous weeks, as well as new infected places arising during the simulation week. The exercise took place within two response centres: the EDRC, located at MAF National Centre for Disease Investigation in Upper Hutt, and the FORT, located at AgriQuality, Palmerston North. In the field, Patrol Veterinarians conducted surveillance visits to five farms to test procedures, and the meat, dairy, hides, skins and animal fibre industries and saleyards participated at industry sites, coordinated from the EDRC. The police and Manawatu regional council participated in desk-top exercises.

‘Exercise Taurus – NRC’ was a whole-of-government exercise of NRC and DESC arrangements. Over 100 people, including representatives from other government agencies, were directly involved. Related industry organisations were also engaged in the exercise. It provided an opportunity to improve coordination across government for dealing with emergency exotic animal disease outbreaks, and to test the Government’s Beehive facilities.

Air curtain trial: the field trial assessed the amount of carcasses that the air curtain incinerator could disposal of over a defined period of time (i.e. estimated ‘through-put’). It also tested the potential environmental effects of discharges to air during a carcass disposal operation. The incinerator reaches very high temperatures, completely destroying all organisms, pathogenic and otherwise, leaving a sterile ash. It is mobile, so can be moved to diseased areas instead of transporting diseased carcasses off a property. This reduces the risk of highly contagious diseases spreading. While the incinerator has limited capacity, it can be used in a number of biosecurity emergency situations where disposal is required.

## Operation Waiheke – background

On Tuesday 10 May 2005 the Prime Minister’s Office received a letter claiming that the FMD virus had been deliberately released on Waiheke Island. Although MAF and the Police considered that the claim was probably a hoax, the threat was taken seriously. MAF immediately activated its emergency management response systems, starting by issuing a controlled area notice restricting the movement of livestock and risk material on and from the island.

Operation Waiheke was a government-wide response to the threat, involving MAF (i.e. Biosecurity New Zealand and the New Zealand Food Safety Authority (NZFSA)), the Ministry of Foreign Affairs and Trade, and the New Zealand Police, along with other agencies and industry groups.

The objectives of the operation were to:

- Prove New Zealand was FMD free
- Mitigate trade risks
- Minimise disruption to the public
- Communicate effectively to all stakeholders, including the public

At its height, Operation Waiheke directly involved more than 100 MAF staff – 60 at MAF and NZFSA in Wellington, 20 at the Exotic Disease Response Centre, and 31 on the Field Operations Response Team in Auckland and on Waiheke Island, plus staff from other organisations. During the operation, a total of 12,000 animals were located and monitored.

The response was scaled back after a Police investigation and the receipt of a second letter, that appeared to be written by the same person, confirmed that the claimed release was a hoax. Operation Waiheke officially ended on Monday 23 May. The 14-day response was dictated by the maximum incubation period of FMD before clinical symptoms become apparent.

It is estimated that the operation cost MAF \$2 million of additional expenses. Lost staff time, any of the costs incurred by the other organisations involved, and compensation costs to farmers would have been additional to this amount.

## Operation Results

Comprehensive emergency management is based on the four phases of: (1) prevention (risk reduction), (2) preparedness (readiness), (3) response and (4) recovery. Prevention is coordinated and delivered day to day within New Zealand’s biosecurity system, i.e. within pre-clearance controls. This report focuses on the preparedness, response and recovery phases, in relation to Exercise Taurus and Operation Waiheke.

## **Preparedness**

Preparedness means developing appropriate policies, procedures and plans for managing emergencies. This includes any activities that make provisions for having people, equipment and facilities in place to respond when the need arises.

Preparatory work for emergency response is not an integral component of work programmes for most MAF staff and there are significant gaps in preparedness in some areas. This is a concern; as was demonstrated during the 2001 outbreak of FMD in the United Kingdom, preparedness activities are crucial in protecting New Zealand's national interest against such a threat. It has been noted that New Zealand is at a similar preparedness level to international observer countries (and facing similar issues); however, this country has a far greater reliance on agricultural trade and is therefore more exposed to the financial risks of FMD than large countries such as the United Kingdom or United States.

MAF has prepared a budget initiative for 2006/2007 in order to maintain and improve its preparedness for high impact disease and pest incursions. This includes MAF's preparedness in established and new areas of responsibility, either as the lead or supporting agency. The emphasis of the budget initiative is on being better prepared to provide a comprehensive response over a sustained period of time.

### ***Organisational structure for emergency response***

#### ***A whole-of-government approach***

In the event of a major emergency disease outbreak, economic, social, environmental, legal, logistical, and trade issues would need to be addressed. This requirement has led to the development of whole-of-government principles, so that central and local government and industry groups are involved across the response. Both operations tested the new whole-of-government structure, which in general worked well. They emphasised the breadth of interest of government departments and other stakeholders in FMD and the availability of resources not often tapped into.

However, more work is needed to clarify how MAF could fit into the whole-of-government emergency management framework, which is currently under development. It has been suggested that this may be preferable to each lead agency creating a new response structure for various types of emergency. One suggestion was that there could be one person who is the emergency operations coordinator for all agencies in the Beehive. Another suggestion was that MAF adopt the Coordinated Incident Management System (CIMS), which encourages a consistency of approach between agencies. CIMS provides a model for command, control and coordination of an emergency response, and is used by other government departments, such as the Ministry of Defence. It has been noted, however, that CIMS has a relatively undeveloped framework for national coordination at the strategic level involving multiple agencies and stakeholders.

**Recommendation 1: MAF should investigate whether its existing NRC team structures can be made CIMS-based or compatible where this results in more effective interfaces with other agencies in a response.**

*LEAD: NRC Steering Group. Business Units to reflect in their work programme reviews.*

### *NRC structure*

The new National Response Centre (NRC) response arrangements and whole-of-government coordination worked well during both operations and, overall, were viewed as being effective. MAF was the lead agency during the responses, with support from other government agencies and industry groups.

However, the new structure still needs refining. There were some concerns regarding the potential disconnect between ODESC and the Watch Group, the NRC Steering Group, NRC teams and field operations. Delegation of tasks between these groups and between EDRC and FORT was sometimes unclear. There was a view that feedback from ODESC and the Watch Group was inadequate and in some instances the media was relied on for internal communications of decisions. There was also some criticism that the NRC structure does not explicitly require MAF to liaise with industry.

There was also a view that the policy groups within each branch<sup>5</sup> of the NRC structure should be combined to enable overall coordination of Cabinet papers and to achieve a more strategic view of policy and legal issues. During both operations, decisions were taken that affected policy work already underway and these decisions were not adequately communicated. It is considered that a combined policy group would help address this problem.

**Recommendation 2: MAF should amend the NRC structure so that the policy unit of the branch leading a response supports the NRC by taking an overall coordination role in preparing ministerial and other briefings and minutes of meetings, while also providing advice to its business unit.**

*LEAD: NRC Steering Group. Business Units to reflect in their work programme reviews.*

A number of people involved in the operations were unfamiliar with the new organisational structure. The NRC manual should therefore be regularly updated and referred to, and staff should be trained how to use it. Staff should also receive specific training in emergency response procedures, outside of simulation events such as Exercise Taurus. This issue will be discussed further in the section on Resources and Shifts (page 25).

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<sup>5</sup> I.e. Disease management policy, recovery management policy, or trade & food safety management policy, depending on the nature of the response – as illustrated in the NRC structure diagram on page 9.

## *NRC location*

There were conflicting views regarding the ideal location of the response centre. One view was that the response should be centred at MAF premises (i.e. split between MAF Head Office at Pastoral House and NZFSA's response centre at Telecom Tower) rather than the Beehive's National Crisis Management Centre (NCMC). Another view was that MAF operations should be located at the NCMC, in alignment with the whole-of-government intentions for the facility and to avoid wasted MAF investment in its infrastructure.

This issue is complex due to the multiple levels of engagement required during a response. The parts of the operation that need to be located at the NCMC should be reviewed. This will depend on triggers such as scale of physical damage; scale of economic impact; level of government financial contribution; and/or scale of physical response required. In all responses, some people may need to be based at the NCMC for liaison purposes, particularly in the early stages. But it was found during the operations that the majority of liaison work required was internal to MAF, and therefore the widely-held view is that most response staff should be based at MAF premises.

**Recommendation 3: MAF should review which parts of its operations should be based at the NCMC facilities in the Beehive, and which should be based at MAF premises, during a response.**

*Business Units to reflect in their work programme reviews.*

## ***Role clarity - internal***

### *NRC operations – decision-making*

Both operations received some criticism for a lack of clarity in decision-making. For instance, there was an apparent disconnect between the Animal Products Act permissions and other parties' expectations in the actual decision-making and approval process. There was also a strongly-held perception that the Steering Group and higher levels of the NRC wanted involvement in many technical decisions. There may possibly be conflicting priorities for trade and disease management in the real event: during Operation Waiheke some actions were taken for trade reasons rather than disease management reasons.

There should be a clear delineation between technical and management decisions taken during a response.<sup>6</sup> It should be clear who is responsible for making what decisions at the various levels of the response; some technical decisions will have important impacts outside the field operations. At the same time, care should be taken to ensure that access to institutional and technical knowledge held by senior management is still available. Role descriptions should reinforce that management roles require excellence in decision-

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<sup>6</sup> 'Technical' decisions involve operational issues, whereas 'management' decisions involve strategic policy and governance issues.

making, and technical roles require excellence in analysis and technical advice to enable good decisions. The boundaries between these roles should be clearly defined.

An audit trail of decisions taken should also be maintained, following the process outlined in the current MAF NRC Procedures document. During both operations, minutes or hard copy outputs (containing agreed action points) from important meetings were not widely taken or circulated. It is anticipated that this shortcoming should be addressed if Recommendation 2 is adopted – i.e. if the NRC structure is amended so that the policy unit of the branch leading a response also takes an overall coordination role in preparing ministerial and other briefings and minutes of meetings. It was also noted that accountabilities need to be clarified – i.e. the ODESC Ministers' respective statutory obligations and responsibilities need to be advised by the relevant departments.

There was no agreed 'critical path' timeline approved in advance of either operation, which set out events such as restricted place notice declarations, OIE notice, road blocks around the restricted places, declaration of a National Standstill, etc. There was some comment that such a timeline would have benefited the operation and helped prioritise decisions to be taken. Although some preparatory work had addressed the responsibility for preparing and approving the OIE notification, more work was needed and there was a delay in the OIE notification details being included in official messages.

**Recommendation 4: MAF should ensure the NRC role descriptions clearly describe the differences between technical and management roles to ensure that the technical and managerial input required of those roles are appropriate.**

***LEAD: NRC Steering Group. Business Units to reflect in their work programme reviews.***

De-brief comments suggested that further role definition work is required. This would, for instance, identify the 'face of the response' and key supporting spokespeople and identify who will manage interface with Ministers and the whole-of-government processes.

### ***Role clarity - external***

Both operations demonstrated that MAF's links with other agencies – and its internal links - have improved markedly from previous exercises, aided by the new whole-of-government structure. However, there is still a significant amount of liaison work to be done in this area.

### ***Government agencies – central and local***

The whole-of-government mechanisms built into the new NRC procedures worked well in general, as they required the co-location of liaison people from other agencies at the NRC. However, both operations demonstrated that that MAF had not carried out sufficient preparedness work with other agencies, and with Police and Defence in particular. In a major emergency response, Police and Defence liaison officers should be engaged from the outset, in particular to investigate how movement controls could be

enforced ahead of the decision announcement. It was also considered that the presence of a Customs Liaison officer in the NRC is crucial to ensure full border protection during a response. Any product can be traced and stopped at the border using Customs' systems. These agencies were briefed in preparation for Exercise Taurus, but links outside policy were not made.

There was also a question-mark regarding liaison with regional councils. These would play a critical role in an actual response, but it is currently unclear who is responsible for linking these stakeholders to the NRC. It is suggested that MAF should improve its links to the regional councils' Coordinating Executive Groups, which are responsible for providing advice and guidance to local authorities and emergency services and are made up of representatives from these organisations. Also, as discussed in the recovery section of this document, regional councils have systems in place that may be useful during the recovery phase of a large-scale pest and disease response, which link welfare-related agencies and agencies with a rural focus. More work is therefore needed to improve MAF's interactions with regional councils.

**Recommendation 5: MAF should continue to strengthen its relationships with all relevant government agencies and regional councils, focusing particularly on the protocols and linkages that need to be in place before an emergency pest and disease response (links back to recommendation 1).**

*Business Units to reflect in system design and response planning work.*

### *Industry*

Industry participation is essential during animal disease outbreaks, in terms of decision-making, communication networks and resource bases. Industry plays a vital role in a response, for instance providing supplementary feed or extra support services for farmers. However, feedback from both operations indicates that industry participation needs improvement.

MAF should carry out in-depth policy consultation with industry, focusing on areas such as meat processing, milk collection, slaughterhouse availability and carcass disposal, and to understand industry drivers regarding compensation, recovery and system stability. There is a need for pre-determined policies and strategies for dealing with industry regarding meat processing and carcass disposal, (although it was noted that these are addressed in MAF's current 153 Standard<sup>7</sup>). Further work on Biosecurity Risk Profiles for industry is also required. Biosecurity measures at the farm level also need improvement, such as the preparation of site plans for emergency disease and pest response (EDRP), and transport movement control measures.

Industry has its own local and international communications network. For instance, during Operation Waiheke, industry alerted its posts overseas separately to MAF communications. Industry has also criticised MAF's perceived failure to communicate

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<sup>7</sup> The MAF 153 series of standards ('153 Standard') specify the requirements, structure and responsibilities of the various parties within MAF and other contracted agencies involved in dealing with incursions of exotic diseases of animals, including diseases and pests of animals, and vertebrate species.

with livestock owners in the surrounding Auckland, Coromandel and Northland areas during Operation Waiheke. Federated Farmers filled this alleged gap by communicating directly to members. MAF should work more closely with industry to improve communication gaps, although it has been noted that industry needs to accept greater responsibility in this area as well.

**Recommendation 6: MAF should continue to build stronger relationships with industry, to:**

- **improve its understanding of industry drivers regarding compensation, recovery and system stability, and**
- **encourage industry to understand its own roles and responsibilities for e.g. meat processing, milk collection, slaughterhouse availability, carcass disposal, and on-farm biosecurity measures such as the preparation of site EDPR plans.**

*Business Units to reflect in system design and response planning work.*

*Overseas trading partners*

New Zealand's overseas trading partners adopted a measured response to the FMD threat during Operation Waiheke. This was aided by MAF's proactive and transparent approach, ensuring that the international response was proportionate to the risks. MAF's informal relationships with key staff in trading partner countries were very useful and played an important role. However it should be noted that international markets need definitive information rather than qualified assurances, so will only act on official notifications. Some problems were encountered communicating with MAF's Quads partners<sup>8</sup> because key staff were not available.

***Preparedness projects***

MAF needs to complete a considerable number of projects in preparation for a large-scale response. During de-brief, most teams and response sites identified that MAF should make a greater investment in scenario or contingency planning, although it was noted that there was an improvement in preparedness within the response sites during Operation Waiheke as a result of Exercise Taurus.

A number of the preparedness projects listed below were identified as being needed prior to Exercise Taurus, and are also discussed in Kestrel Group Limited's final report on Exercise Taurus.<sup>9</sup> Work has already begun on some of these projects; however they all require further work and sign-off by MAF senior management. This is not an exhaustive list; rather it indicates some of the major work required for MAF to be ready to respond to an FMD outbreak.

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<sup>8</sup> Four countries – the United States, Canada, Australia and New Zealand – meet routinely to discuss mutual food-safety and animal health concerns. The meetings are formally known as the Quadrilaterals, but more commonly referred to as the 'Quads'.

<sup>9</sup> Final Report on Exercise Taurus (NRC) 12 & 13 April 2005. Kestrel Group Ltd. [Appendix B - list of capability work recommended].

Some preparedness projects identified during de-brief include:

- **Policy:**
  - Investigate the trigger-points for a regional or national standstill, and how it would be enforced (including human and animal welfare issues)
  - Investigate the use of suppressive vaccination as a tool during an FMD outbreak
  - Review MAF's rural welfare and recovery policy, and strengthen links with other relief organisations
  - Review the options for an improved national farms database, including formal specification of commercial and non-commercial farm data to be held in AgriBase
  - Clarify compensation policy and procedures, including how systems should be maintained if the industry ceases production for a short time
  - Investigate abnormal event notification procedures, i.e. for bio-terrorism or hoax events
  - Clarify the implications of movement controls etc for animal welfare, including operational and legal requirements
- **NRC procedures:**
  - Improve job cards/role specifications and descriptions
  - Create more templates for e.g. briefings etc
  - Agree a critical path deadline that sets out important events during response procedures
  - Create an audit trail to track decisions made during a response
- **Field operations [EDRC/FORT] procedures:**
  - Review templates and forms for surveillance and IRS procedures
  - Review technical specifications for mapping layers and movement patterns
  - Review team procedures, job cards etc to ensure integration with other response sites
- **Communications:**
  - Complete review underway of communications policy, including: pre-event planning; initial messages; technical support; 0800 number; video conferencing; website requirements; identifying the audiences; etc.
- **Training and resources:**
  - Develop training and rapid induction processes, which allow staff to 'up-scale' to emergency management roles
  - Investigate fast-track employment programmes for non-MAF staff
  - Continue to schedule regular simulation training, also testing shift changes
  - Investigate methods to ensure welfare of staff when working long hours during a response
- **Working with industry:**
  - Prepare pre-determined policies and strategies for working with industry, focusing on significant areas such as meat processing, milk collection, slaughterhouse availability and carcass disposal
  - Complete work underway on biosecurity risk profiles for industry
  - Develop contingency agreements and protocols with identified suppliers

- **Working with external agencies:**
  - Develop job-cards for other government agencies for use at the NRC level
  - Develop protocols, agreements, training programmes with external agencies
  - Improve understanding and recognition of external agencies' functions and the level of support they can provide, including links with regional councils
  - Improved 'peace-time' communications with relevant external agencies

Legal preparedness projects include:

- Clarification of powers when using other legislation in addition to the Biosecurity Act 1993 (BSA) and the Animal Products Act 1999. Need more information about legislation controlling other agencies' (emergency) responses.
- Further consideration needed on the legal instruments that might be used – pros and cons of a biosecurity emergency under part VII of the BSA versus other control methods. Draft legal instruments i.e. controlled area notice, biosecurity emergency, lack of understanding of the legal authorities contained in the various acts

**Recommendation 7: Each of the four NRC teams should develop a work programme (including, for example, technical plans, pre-prepared material and templates) and dedicate resources to complete preparedness work required.**

*Business Units to reflect in system design and response planning work.*

## ***Communications strategy***

Communications is a critical, strategic function, as integral to an emergency response as the management and field operations. Both operations showed that communication systems, networks and administrative arrangements must be improved, to ensure messages are robust and consistent in the event of an FMD or other significant outbreak.

### ***External communications***

Communications with external agencies and stakeholders improved from past exercises, due in part to the adoption of a whole-of-government response. At the outset of Operation Waiheke, important people and overseas regulatory authorities were contacted on a personal 'pre-notifications' basis. This helped maintain good-will and emphasized some of the benefits of a pro-active, transparent approach with overseas markets – although the approach did raise some questions, such as who approves the information release. It has been suggested that MAF should institutionalise any informal relationships through succession planning, which would ensure these links are not lost when staff changes occur. Senior management staff and senior communications staff were on location during Operation Waiheke, and this approach worked well. The involvement of local government officials and the chair of the local community board from the outset was considered very successful.

Despite this, more work is needed to improve external communications. Communications were slow, highlighting the need for more pre-prepared 'holding' material to release within a short time of diagnosis or even suspicion, as well as an overall communications plan to identify what pre-prepared material is necessary. It has been suggested that a review of the information requirements for different audiences (e.g. the media, other government agencies, industry stakeholders, etc) should be carried out, while avoiding contradictory messages; the same information should be made available to everyone. Communication tools also should be reviewed (i.e. 0800 numbers, technology for responses, etc), and stakeholder communications policy and procedures are needed. No media analysis was carried out after Operation Waiheke.

**Recommendation 8: MAF, in consultation with its biosecurity partners, should develop and implement a communications strategy for emergency response that is reviewed and updated regularly. Communication arrangements, including staffing resources, and the contacts database should be refined and updated regularly.**

*LEAD: Corporate Communications*

#### *Internal communications*

In general, the response sites communicated well with each other, using methods such as daily written reports, teleconferences and liaison staff. However, internal communications can always be improved. Decisions sometimes took a long time to reach the response sites (e.g. during Exercise Taurus, the news media would have broadcast information long before NZFSA was in a position to issue formal notice to MFAT for circulation to New Zealand's trading partners).

It was suggested that middle-management briefings may improve information flows, and that staff should have web-based instant access to security walls. All sites should be kept up-to-date with NRC Steering Group decisions and with the outcomes of field operations. This will be better achieved if recommendation 2 (above) is adopted; i.e. the NRC structure is amended so that the policy unit of the branch leading a response takes taking an overall coordination role in the NRC.

It was also suggested that liaison officers in the various teams could assist in sharing timely, accurate information between Biosecurity New Zealand and NZFSA and the field operation sites and help link field operations with the NRC. Due to the daily routine of the response sites, it was noted that there are only certain times in the day when liaison officers would be able to communicate with operational role-holders.

Time is also needed to collate and analyse data and reports of appropriate integrity for management. Response staff must have an explicit understanding of what information is important to each level of the response structure or each operational group. Information can then be filtered, prioritised and reported accurately, rather than time being wasted communicating mass information. The daily routine therefore needs to be better understood and the response managed in accordance with a known, reliable, daily briefing and reporting system.

**Recommendation 9: MAF should develop systems to ensure rapid and accurate transmission of information between field operatives and decision-makers at the NRC. Liaison officers should be used to improve information flows between the response sites and with affected industry groups. General staff familiarity of the daily routines at the response sites should be increased.**

*LEAD: Corporate Communications. Business Units to reflect in system design and response planning work.*

## **Information management**

### *Casing*

‘Casing’ is the verification of data held on people, properties and herds, using techniques such as helicopter surveillance, drive-by surveys, telephone surveys, GIS data, patrol veterinarian casing, door-to-door surveys, council rating information, etc.

Although early casing efforts were very accurate during Operation Waiheke, it took some time to complete the identification and locality of all farm animals on the island, particularly on small lifestyle blocks. This was partly due to the fact that data was only held on properties with animals, not on the ones without. So in part, the delays in casing were due to deficiencies in the AgriBase data, which is discussed in more detail below. Data collection methods were also identified as causing some of the delay.

This delay was a concern, as New Zealand’s overseas partners required assurance that casing been completed in order for trade to continue. It has been suggested that a strategy should have been formulated in the early stages of the response prioritising casing methods based on return per effort. For example, helicopter casing was proven to be an efficient and effective way to confirm and validate the farms data. Although only a few additional properties with animals were identified this way, helicopter casing can be used to compliment other casing methods or if available information is incomplete.

### *Tracing and surveillance*

‘Tracing’ is the tracking of all disease-conveyor contacts from source to destination; i.e. within and originating from a high-risk area. For example, one animal may move from farm (1) to farm (2) to sale yard to slaughterhouse during its lifetime, coming into contact with other animals at each move. All of these movements and animal contacts must be identified during a response.

Operation Waiheke highlighted the importance of being able to rapidly and accurately trace livestock and other potentially infected material. This is a critical success factor of an FMD response. New Zealand’s ability to implement an effective FMD response could be jeopardised unless there is a nationally consistent and compatible livestock identification system. The speed with which at-risk animals and materials are identified, traced and assessed will determine the length and the cost of the outbreak.

Tracing associated with farms etc is managed via the EDRC with product-related tracing occurring within the respective 'industry liaison' groups (Dairy, Meat, Hides, Skins and Animal Fibre). These 'industry liaison' roles are provided by MAF-contracted personnel from AgriQuality andASURE. During Operation Waiheke, a two-person tracing team was located at the EDRC. There are currently 30 trained role-holders that could have been deployed, so a significant number of available staff were held in reserve. These additional people were not required due to the very low number of traces from Waiheke Island during the risk period, and because no internal tracing was carried out as no Infected Places or At Risk Places were identified on the island.

There was some double-up of tracing done on animals that had gone to slaughter during Operation Waiheke. However, tracing requires conveyor movements to be traced to an end point. This combined with the capture of information from multiple sources means that duplicate traces will occur periodically. Consequently, this was not considered a significant issue.

Some people considered that the surveillance objectives during Operation Waiheke were unclear. During the operation, there was a shift in objectives from the surveillance of risk-based animals and material (i.e. cattle, sheep and hay) to a complete census of all livestock on Waiheke Island. It was suggested that this shift created difficulties for the field operations. However, this change in emphasis has been attributed to the shifting balance between the surveillance and trade objectives. For the surveillance objective (which involved farm visits and tracing), 100% casing is not mandatory; there will be diminishing returns for surveillance with the last 5% or so sites. Conversely, 100% casing is mandatory for the trade objective, to ensure that no risk movements from the island had occurred in the risk period.

Thus, the intense casing activity should be considered as occurring to meet the objective of trade risk mitigation. It was also noted that Operation Waiheke was a unique situation that differed from most outbreaks, which start with a single defined infect place (as opposed to a hoax letter and no geographical coordinates). Casing therefore became the primary focus for both surveillance and trade during this operation.

### *AgriBase*

AgriBase is a national database or central index of farm ownership, location and management throughout New Zealand, owned by AgriQuality Limited. Its primary use is for biosecurity, disease management and food safety. It contains comprehensive information on species such as sheep, beef, dairy, deer, pigs, poultry, horses, goats and a number of others. It also contains details of forest cover and horticulture.

New Zealand has no legislation for mandatory submission of data by farmers or orchardists, so the data has been maintained by AgriQuality's on-farm team and mail-shots by AgriQuality's Geospatial Services department.

Each listed property (i.e. 105,000 farms for both livestock and horticulture) has a unique identification code, which accesses information on the farm as well as a description of the farming enterprise and contact information for decision-makers and owners for the farm. MAF uses information provided by AgriBase within its incursion response system (IRS).

A comprehensive farms database, such as an enhanced AgriBase, when combined with a fully resourced tracing team, could provide the rapid collation of data required in a response. AgriBase covers over 94% of all commercial farms greater than four hectares. However, it has never been adequately extended to cover non-commercial farms or lifestyle blocks, due to the lack of legislation, the volatile nature of these properties, and the lack of a mandate from MAF to do so. AgriBase was therefore unable to provide complete information on all properties with livestock on Waiheke Island. It provides no electronic links to other available national databases, although data is exchanged with Fonterra, Ovis Management Ltd, and Livestock Improvement Corporation Ltd.

Regardless of the strategic reasons behind the deficiency in the available casing data, MAF's ability to respond to outbreaks of FMD is weakened as a result. This is particularly relevant when dealing with suspected (but not confirmed) outbreaks such as during Operation Waiheke, when trade continuation can depend on showing excellence in casing.

In addition, an animal movement, or traceability, database (which currently exists in part through the AgriTags register system) could provide a significant head-start in tracing – although in-fill tracing is very likely to be required, just as it was to achieve the last 5-10% of casing during Operation Waiheke. Currently, all movements of cattle and deer, and movements of all animals to slaughter are covered by a paper-based system, although electronic traceability systems for cattle and deer are under discussion.

A comprehensive national system that identifies and links properties, people and animals is required. This includes implementing animal identification systems that are linked to a movement register. A national system should have a larger purpose than the identification of commercial animals for trace-back purposes; it should also maintain accurate information about property type (e.g. commercial or non-commercial, etc) and should allow for the speedy contact of landowners. Components of such a system already exist (e.g. AgriBase), but development of and linkage to other system components requires a clear strategy and inter-agency coordination.

**Recommendation 10: Casing data: MAF should establish the specifications required for comprehensive coverage in an enhanced farms database. This information could be built into existing systems (i.e. AgriBase). Robust methods should be developed that can migrate any incomplete data into new systems.**

*LEAD: Biosecurity New Zealand.*

**Recommendation 11: Movement data: MAF should continue to work with its biosecurity stakeholders to develop a national livestock identification system for all FMD susceptible species, which can rapidly and accurately trace animals, and which is linked to the enhanced farms database (see Recommendation 10).**

*LEAD: MAF Policy.*

## *Zoning / movement controls*

Both operations highlighted the need to widely advertise all zoning and movement controls. There was no planning for the animal welfare implications of movement controls – but this would be a major issue, particularly during a full-scale response extending beyond two weeks where intensively farmed species such as pigs were involved. There was a concern that zoning terminology is not well understood, despite information being available on this topic. It was suggested that movement control policies should be amended so that permit applications occur at the FORT rather than EDRC level, as this could result in better controls and improved auditing.

## *Logistics*

Each NRC team response site has its own logistics requirements, and identified its own logistics shortfalls during the operations. Some significant concerns included:

- Access to files: the file structure was complex, there were access issues and the network system was unfamiliar for non-MAF participants. The requirement for MAF staff to move their own PCs to the NRC imposed a delay in set-up time. IT failures led to communications bottlenecks.
- Telecommunications: no available cell-phones for some staff who needed them, no generic 0800 number, and the need for a telephone strategy in emergency response.
- Preferred supplier arrangements: more preparedness work is needed to put memorandums of understanding and contracts in place for MAF's preferred suppliers.
- Mapping and GIS resources: these were inadequate and need improving. The current system generates information at the EDRC rather than the NRC – however GIS issues cannot be resolved at a site level.

**Recommendation 12: Each of the four NRC teams response site should add any logistics needs to its preparedness work programme.**

*Business Units to reflect in system design and response planning work.*

## **Response**

The response phase begins directly after MAF is notified of a suspected unwanted pest or disease. It involves two further phases: an initial response phase, where a decision is taken to take further action or stand down, based on technical feasibility and cost-effectiveness measures; and an ongoing response phase, when a decision is taken to respond and the unwanted disease is controlled or eradicated, or response efforts are ceased.

## ***Resources / shifts***

It is estimated that current resourcing arrangements could not sustain a medium-scale response beyond a week. There are significant concerns relating to the sustainability of a longer operation; an outbreak of FMD could take up to six months and possibly longer to eradicate.

During a long-running disease outbreak, MAF will need enough staff available to cover 24 hours, seven days a week. This would require three rotating shifts, where two shifts operate back-to-back each day, and each shift works a roster of four days on, two days off. The transition between the shifts must be seamless, but neither operation tested transition between shifts, although Exercise Taurus, which started in the third week of an epidemic, was designed to highlight this issue. Without adequate shifts, decision-making will falter as personnel become fatigued; tiredness was a real factor in Operation Waiheke. Therefore MAF should improve its ability to operate '24/7' during a longer response.

As part of this process, MAF should ensure that both experienced and senior personnel are accessible around the clock. For example, during Exercise Taurus, the lack of access to senior staff at the NRC slowed the clearance of tasks requiring approval. The experienced staff required in three shifts should cover all areas of the operation, including communications, policy, legal, trade, and administration support.

The 153 Standard specifies that MAF must maintain a 'coordinated national capability to investigate and respond to a case of suspected exotic disease'. It must be prepared for an outbreak involving 'up to 25 restricted places in the first seven days of a response, and after that up to 10 restricted places per week throughout the response'.<sup>10</sup> However, MAF's current field operations have been assessed as being significantly under-resourced. The satellite head-quarters and roles that AgriQuality provides to the EDRC operations include second and third rosters, with the exception of GIS. But the revised 153 Standard issued in October 2004 specified additional roles which have not, as yet, been funded. In addition, MAF has yet to quantify the resources required based on a specified epidemic size over time.

It has been suggested that this resource short-fall be covered by a 'contingency' army, which would include more personnel than government agencies can currently provide. During a large-scale response, it will be necessary to look beyond MAF for staff, and it is anticipated that people could be drawn from district and regional councils, emergency services, technical laboratories, processing industries, the stock and station industry, overseas, and the local community.

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<sup>10</sup> 'Restricted place' means any place that an inspector or authorised person has declared to be a restricted place under the Biosecurity Act 1993.

**Recommendation 13: MAF should ensure there is an adequate level of trained emergency response personnel, including specialised scientific staff, to be able to participate in a sustained emergency response, and build this into response plans. This involves working in partnership with all biosecurity agencies and stakeholder groups.**

*Business Units to reflect in system design and response planning work.*

**Recommendation 14: MAF should review current response standards and procedures (such as the 153 Standard) as part of its work programme to ensure that all specified requirements are adequately resourced and scale-up processes are identified.**

*Business Units to reflect in system design and response planning work.*

### ***Simulations and training***

Exercise Taurus allowed staff and external participants to hone their skills in emergency pest and disease response, and increased their understanding of some significant technical and scientific policy issues. It was an improvement on previous exercises, in particular because it adopted a whole-of-government approach. As Exercise Taurus was, in effect, a practice run for Operation Waiheke, the location and apportioning of staff across teams was improved during the second operation. During Operation Waiheke, many participants were up to speed with the NRC structure and what was required of them.

Simulations should be used to assess MAF's emergency response systems. They can be made 'fit-for-purpose' and used for specific training purposes or to highlight the unique features of a response site. For example, NZFSA is required to handle events other than disease-caused responses (e.g. food recalls) and could find value in holding simulations to test its internal emergency management systems.

It has been suggested that MAF should have dedicated training and induction personnel, who are trained in preparation of an emergency response. These people could then train further response staff on a 'just-in-time' basis; i.e. during the first weeks of a major response. It is considered that simulations are secondary to adequate role-holder training, and priority should be given to defining roles and procedures and training role-holders.

**Recommendation 15: MAF should develop an on-going training programme that includes regular simulations such as Exercise Taurus. Any training should be applicable to all types of emergency pest and disease response. This should involve others from industry and other government departments.**

*LEAD: NZFSA and Biosecurity New Zealand (for respective simulation programmes).*

**Recommendation 16: MAF should continue to develop a system to enable training of additional response personnel during a response ('just-in-time training').**

*Business Units to reflect in system design and response planning work.*

**Recommendation 17: MAF should provide potential role-holders with a training programme that enables them to 'up-scale' to emergency management roles during a major response. This training is in addition to any simulations.**

*Business Units to reflect in system design and response planning work.*

### **Response start-up**

Because Operation Waiheke began due to an abnormal event notification (i.e. a bio-terrorism threat), it tested the 153 Standard's flexibility to cope. MAF's field operations were required to step outside the 153 Standard framework on a few occasions in the early stages of the response, as a result of directions from the NRC that were not within the 153 Standard command structure. This created the potential for uncertainty in the command chain and MAF's operational responsibilities.

During Operation Waiheke, surveillance visits were carried out in accordance with MAF technical specifications. Additional veterinarians could have been deployed if specifications had changed during the course of the response. Veterinarians scheduled for deployment to Waiheke to replace staff who had completed their 'tour of duty' were stood down when the threat was confirmed as a hoax. From then, the holding pattern of low-level monitoring was implemented in accordance with directions from the NRC.

### **Recovery**

Recovery is the coordinated efforts to achieve the immediate, medium and long-term restoration of routine activities in a sector or region following a biosecurity incursion. Industry can play an important role in this phase. Recovery begins immediately after the impact of an event and works in parallel with response activities, and aims to:

- minimise the escalation of impacts of the incursion, particularly social welfare, animal welfare and environmental impacts
- re-establish local and export trade
- re-establish former primary production activities or develop alternatives, and
- reduce future exposure to biosecurity hazards and their associated risks.

## ***Compensation***

A large-scale response would probably result in millions of dollars worth of compensation claims to the government. However, the compensation mechanisms contained in the Biosecurity Act 1993 were not fully tested during the operations, although some compensation was provided as a result of Operation Waiheke.

There is a lack of clarity around the compensation process and the timeframes for processing claims are unpredictable. This would particularly be the case during a large-scale response involving slaughter of livestock. In such an event, there may likely be a negative reaction among farmers towards disease control operations because of these problems. This would make the task of field personnel far more difficult and may disrupt the entire operation.

It is highly unlikely that MAF currently has adequate resources to administer and verify compensation claims during a large-scale response. It has also been questioned whether New Zealand can afford the compensation measures involved in the BSA. Compensation policy work needs to be carried out that includes mechanisms for community support and system stability. Treasury input will be necessary during this process.

## ***Recovery management***

Industry and sector groups are primarily responsible for recovery activities. However, where an event is of a significant scale and magnitude to warrant government intervention, MAF will lead the recovery phase. The level of its recovery support will be assessed on the merits of each biosecurity emergency. MAF's two main roles in recovery management and support are:

1. **Coordinating international recovery activities**, which includes communications with trading partners to maintain or re-open market access; and
2. **Coordinating a national whole-of-government recovery response**, which includes:
  - monitoring and assessing the economic, environmental and social impact of the incursion
  - reporting to Cabinet on the impact of the incursion and the appropriate whole of government response
  - coordinating relief services such as welfare and health services, tax relief, taskforce green, etc
  - assessing medium and long term economic and environmental impacts, and
  - funding research and technology transfer, ranging from the development of bio-controls by crown research institutes to industry-led projects funded through the Sustainable Farming Fund, several of which include pest management practices on farms and in forests.

The recovery phase was not tested in either operation. Although MAF Policy has the responsibility for biosecurity-related recovery activity, currently there are no formal MAF procedures exist for the recovery phase of a major disease outbreak. This has been identified by MAF Policy as a gap, and as an area for future work. The recovery phase, if activated, would require significant time and resources. Public confidence in the government's handling of an FMD emergency will also likely depend on the speed of delivery of relief and recovery measures. MAF therefore intends to focus more closely on recovery management in the future.

There was concern that MAF Policy was not adequately engaged in either operation. Although MAF Policy has the responsibility for coordinating recovery measures, there is a lack of clarity on the boundaries and scope of recovery-related activity. This also has been identified as an issue by MAF Policy and Biosecurity New Zealand.

**Recommendation 18: MAF should continue its work on developing recovery policy during a biosecurity incursion event. Stronger linkages between Biosecurity New Zealand and MAF Policy should also be maintained between all response, compensation and recovery policy developments to ensure a co-ordinated approach.**

***LEAD: MAF Policy***

The recovery needs arising from major biosecurity events are numerous and diverse, requiring recovery policies to be comprehensive and wide ranging. MAF's experience of recovery activities following climatic events has shown the importance of mitigating the social impacts of events. Victim support services and rural trust services played an important part in rehabilitating social structures after major flood events. This would certainly be the case during a biosecurity emergency as well. Research into the FMD epidemic in the Netherlands in 2001 has shown that almost half the farmers whose livestock was culled had symptoms of post-traumatic stress at levels requiring professional help. An FMD crisis would most likely be an extreme stressor and a substantial threat to the health and well-being of individual farmers. This aspect of an epidemic may continue long after disease activity ceases.

Biosecurity recovery policy will need to reflect these potential welfare issues. Effective recovery management comprises of a complex system of networks and systems that provide support to affected farmers and other sectors of the community. There are already a well established set of emergency systems, such as local civil defence and emergency management cluster groups and local welfare advisory groups. This is in addition to the strong regional presence of government departments such as Work and Income New Zealand and the Inland Revenue Department, and the expertise and local knowledge of groups such as the New Zealand Veterinary Association, Federated Farmers, the Road Transport Forum, Fonterra and AgriQuality. MAF aims to strengthen its links with these existing networks in its future recovery policy development work.

**Recommendation 19: MAF should further strengthen its links with existing emergency relief and recovery networks that can help reduce the potential social and economic impacts of an FMD outbreak.**

*LEAD: MAF Policy*

## Concluding comments

FMD would have a very severe impact on New Zealand's economy if it made its way to this country. Both Exercise Taurus and Operation Waiheke provided MAF and other government agencies and industry groups with a wider appreciation of the serious and wide-ranging implications of a full outbreak of FMD.

The operations demonstrated the complex nature of judgements that had to be made, and the challenges of making such judgements under pressure. Operation Waiheke also required a balance between over-reacting, and thereby causing even more stress to the local community, and under-reacting, and thereby running the risk that a real outbreak was overlooked or causing suspicion among our trading partners. It was generally felt that MAF and its operation partners handled these challenges well.

The operations also identified significant gaps and weaknesses in MAF's ability to respond to a large-scale outbreak, across all phases of a response (i.e. preparedness, response and recovery phases). The fundamental message is that MAF must improve its preparedness for and ability to respond to a major exotic disease outbreak such as FMD – particularly for a long-term response. Despite the gaps in MAF's preparedness for an FMD outbreak, preparatory work for emergency pest and disease response is not an integral component of most work programmes.

This report has summarised comments from de-brief material from both operations. Analysis of these comments highlighted a number of themes, including: a need to improve some aspects of the organisational structure of the response; a need for closer stakeholder liaison, particularly with industry; a need for more preparedness material; weaknesses in communications and media management; inadequate animal population and movement data; serious doubts regarding the sustainability of a longer operation; and a lack of focus on recovery. This report has made 20 recommendations that, if implemented, will assist MAF address these themes. It is hoped that they will be included in work programmes across all MAF response sites.

FMD is a low risk, high consequence disease. Therefore, any work carried out to improve MAF's ability to respond to an FMD threat should be applicable to the generic incursion response framework, which is currently under review.