NATIONAL FRUIT FLY STRATEGY

Implementation Action Plan

Prepared by the NFFS Implementation Committee

April 2010

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FOREWORD

On behalf of the National Fruit Fly Implementation Committee I have pleasure in introducing the draft National Fruit Fly Strategy (NFFS) Action Plan.

The National Fruit Fly Strategy Action Plan represents the culmination of some nine months work by experts from industry and government that commenced with the release of the draft National Fruit Fly Strategy by the Federal Minister for Agriculture, Fisheries and Forestry in November 2008. The NFFS Action Plan proposes the implementation of key recommendations contained in the draft NFFS that lay the foundation for a new and sustainable national approach to the management of fruit flies in Australia.

Fruit flies are a large and important group of insect pests that globally attack a wide range of fruit and vegetables and can have a major impact on Australia's capacity to trade in domestic and international horticultural markets that have an average annual value of $4.8 billion.

Against a background of declining financial and technical resources and increased pest threat levels, it has been recognised that a national coordinated approach to the management of fruit flies is now required to protect Australian horticulture and maintain and enhance market access.

The Action Plan is designed to guide the implementation of an effective national management strategy for the control of all fruit fly species in Australia. It recognises that management of fruit flies in Australia requires an integrated national approach that defines clear roles and responsibilities for industry, government and community stakeholders.

Drawing upon the HAL Horticulture Market Access R&D Strategic Plan 2009/10 to 2013/14, the Committee has reviewed and prioritised the initiatives within the draft NFFS and developed 15 key initiatives and projects to facilitate the introduction of a sustainable national approach to the management of fruit flies. In addition, a new governance mechanism is proposed that will guide the implementation of these projects and provide ongoing coordination and support for industry and governments from a national perspective.

The NFFS Action Plan is designed to:

- Enable government, industry and community investment to be carefully prioritised and targeted towards maintaining, protecting and enhancing critical domestic and international market access;
- Reduce overlap of effort and duplication of resources across regions, jurisdictions and industries;
- Ensure financial investment in maintaining market access brings optimum returns for industry and government stakeholders;

- Provide significant support for local industry management of fruit flies in both endemic and pest free areas;
- Improve coordination of operational responses to fruit flies in all production areas;
- Facilitate the sustainable and long-term management of fruit flies, with support for industry and government stakeholders provided by a national governance mechanism.

The implementation of the NFFS Action Plan by stakeholders represents a unique opportunity to improve long term market access for Australian horticulture. It will assist government and industry stakeholders to focus investment on national management strategies that maximise and enhance domestic and international market access and minimise the impact fruit flies have on production.

I would like to thank the committee, Lois Ransom (OCCPO), Don Plowman (PIRSA), John Chapman (DEEDI), Don Gunasekera (formerly ABARE), Bill Woods (DAFWA), Andrew Green (SA Citrus Development Board), Mark Panitz (formerly Growcom), Nigel Steel Scott, (formerly HAL) and Barry Windle (WGMARD) for their work and commitment to the development of this important initiative. I would like to thank Nicholas Woods and James Garden, (PHA) for serving as the secretariat for the Implementation Committee.

We commend this plan to you.

Paul Hickey
Chair of the National Fruit Fly Strategy Implementation Committee
September 2009

EXECUTIVE SUMMARY

Fruit flies are a large and important group of insect pests that globally attack a wide range of fruit and vegetables, with significant economic implications for horticultural production and market access. Two significant species, Mediterranean fruit fly (Med-fly) and Queensland fruit fly (Q-fly), are present in Australia. Mediterranean fruit fly (*Ceratitis capitata*) permanently inhabits the southern growing regions of Western Australia, whilst Queensland fruit fly (*Bactrocera tryoni*) is found in parts of the Northern Territory, Queensland, New South Wales and the eastern corner of Victoria.

Unlike the management of many other pests however, fruit flies can have a major impact on Australia's capacity to trade in domestic and international horticultural markets. Fruit flies do not recognise commercial/domestic or state, regional boundaries and jurisdictions. Fruit flies are highly mobile, capable of flying short distances and being transported long distances. They also have the potential to infect a wide range of crops from mangoes to apples and tomatoes to grapes. Also, unlike many other plant pests, the management of these pests cannot be conducted solely on farm and the loss of control on a particular property can have a wide implication for commercial regions and the wider community.

Recognising that continued sustainable and effective access to domestic and international commodity markets require efficient management of fruit fly species, the Federal Minister of Agriculture, Fisheries and Forestry released a draft National Fruit Fly Strategy (NFFS) in November 2008, as an initiative to implement an effective national management strategy for the control of all fruit fly species in Australia.

The strategy aims to develop a viable, cost-effective and sustainable national approach to fruit fly management, with commitment from all stakeholders. To extract from the 2008 review of quarantine and biosecurity by Mr Roger Beale AO and his review panel, biosecurity management is a difficult and complex task and Australia's biosecurity regime should, through careful management, minimise the risk of the entry, establishment and spread of exotic pests and diseases that could harm our people, agriculture or environment. The panel noted that Australia's biosecurity system has worked well and this is the case for management of fruit fly. The challenge for the National Fruit Fly Strategy is to enhance all aspects of fruit fly management to deliver an even better system to the benefit of all stakeholders.

To direct the implementation of the NFFS, an Implementation Committee (IC) was formed in late 2008 chaired by Mr Paul Hickey. With reference to an analysis of the commodity supply chain, the NFFS IC reviewed and prioritised the initiatives within the draft NFFS and developed 15 key projects to facilitate an enhanced and sustainable national approach to the management of fruit flies in Australia.

It is the view of the Implementation Committee that to effectively implement a national approach to fruit fly management, the projects within this Action Plan should be considered as an integrated package. If the projects are considered in isolation it is possible that the integrity of the supply chain could be compromised and the functionality of the future fruit fly management system could be undermined.

However, the IC also recognised that some projects and tasks would benefit from being implemented quickly (1 – 2 years) to address current issues, whilst others should be completed over a longer time period in a complementary and logical sequence. For example, Project 8 is vital for addressing the potential change of use for disinfestation chemicals such as dimethoate and fenthion and therefore should be instigated immediately.

It is proposed that all projects are initiated over a three year period (2010 – 2012) with ongoing work expected to continue after this period. A summary of these projects are listed below.

PROJECTS

PROJECT 1 - NATIONAL DATA SHEETS FOR HIGH PRIORITY SPECIES.

Develop species specific data sets for all exotic and endemic high priority species (identified through the risk analysis proposed in project 2). Building on the data sheets developed through the Fruit Fly Body of Knowledge project (BoK) and accessing relevant BoK data, process all fruit fly data into the agreed datasheet format before undertaking a gap analysis to identify potential areas where further work is required to improve, validate and publish it. Store all information in an appropriate electronic format e.g. ABIN, PaDIL.

PROJECT 2 - NATIONAL BIOSECURITY PLAN FOR FRUIT FLIES

Develop a National Biosecurity Plan for fruit flies that will include:

- A risk analysis of all endemic and exotic fruit flies that could affect Australian horticultural industries;
- Biological and ecological data on all high priority species (See project 1);
- Diagnostic protocols (see project 3) and contingency plans for high priority species.
- Relevant preparedness and prevention measures (e.g. on-farm biosecurity practices)
- Surveillance and detection strategies (See projects 4 and 5)
- Technical management information (e.g. chemical usage)

Use the biosecurity plan as the basis for preparedness activities including the preparation of specific fruit fly Biosecurity Surveillance, Incident Response and Tracing system (BioSIRT) templates and development of incursion-simulation training packages that can be used by stakeholders as required.

PROJECT 3 - NATIONAL FRUIT FLY DIAGNOSTIC STANDARDS AND NETWORKS

Establish a nationally agreed standard for fruit fly diagnosis. Building on existing work in this area, establish and maintain a national diagnostics network that identifies relevant national and

international experts, laboratories and centres of expertise, essential equipment and reference collections and provides the necessary tools to promote communication and collaboration.

PROJECT 4 - MAPPING AUSTRALIA'S FRUIT FLY STATUS

Ensure all current and future fruit fly surveillance programs are captured in BioSIRT, and where possible, past data. Use this information to establish a 'national map' of surveillance activities that is capable of presenting the status of all high priority species in real time.

PROJECT 5 - INTEGRATED NATIONAL FRUIT FLY SURVEILLANCE SYSTEM

Review current fruit fly surveillance practices against both domestic and international standards, particularly focusing on surveillance techniques, trapping tools and data interpretation methods. Document the practices in the form of agreed national standards for the surveillance of fruit flies.

These national standards will be designed to meet market access requirements, including export certification, early detection and emergency response outcomes. Ongoing management of the system will include mechanisms for identifying development needs and fostering innovation and efficiency through research and development, across all elements of the surveillance continuum.

PROJECT 6 - MAINTAIN THE TORRES STRAIT FRUIT FLY DETECTION AND ERADICATION PROGRAM

The Torres Strait fruit fly program combines routine early detection surveillance with eradication activities to prevent the entry and establishment of a number of target economic fruit flies on the Australian mainland.

Continue support for the long-term Torres Strait containment program to minimise seasonal incursions of non-endemic fruit fly species through natural spread into northern Australia, and undertake select initiatives to enhance it. In particular, undertake:

- a review of the current area of operation and high risk entry points to ensure the program continues to effectively protect Australia against fruit fly threats present in South-east Asia, and
- a comprehensive BCA of the program, align program delivery and funding with other detection and eradication programs and secure on-going funding through an agreed cost-sharing arrangement.

PROJECT 7 - NATIONAL FRUIT FLY INFORMATION PORTAL

Develop a portal that will provide necessary access to all relevant fruit fly information and provide a networked work space for communication and collaboration. This network will store information from the implementation of the strategy including diagnostic protocols, treatment schedules, pest data sets and national standards.

PROJECT 8 - NATIONAL STANDARDS FOR FRUIT FLY DISINFESTATION TREATMENTS

Undertake a study on the range of post-harvest disinfestations treatments, for fruit flies and similar organisms, and current and future market access requirements. Use this study to recommend further research into current and new measures.

Document these measures as an Australian disinfestation treatment schedule for fruit fly. Once completed, secure its national endorsement. The schedule will outline nationally agreed treatment processes and standards, and their relevant efficacy so they can be applied to a range of varying crops depending on the particular regions fruit fly status.

PROJECT 9 - NATIONAL STANDARDS FOR FRUIT FLY MANAGEMENT SYSTEMS

Review current field control and pre-harvest treatment measures for fruit fly (e.g. Area Wide Management) including an assessment of their efficacy. Based on this review develop efficacy or outcome standards for national agreement and implementation. Measures will provide options of a known efficacy for effective management and control of fruit fly across a wide range of situations and outcomes.

Commission a specific review of current Sterile Insect Technique (SIT) practices to develop a national position on the use of SIT for managing fruit flies in Australia. The review must consider the range of activities associated with the production and dispersal of the flies and take into account international best practice.

Develop appropriate measures for the effective management of abandoned orchards to minimise the risks they pose to effective control and management of fruit flies.

PROJECT 10 - DEVELOPMENT AND ADOPTION OF SYSTEMS APPROACHES FOR MARKET ACCESS.

Support current activities focused on the application of Systems Approach for the management of fruit flies for market access. Building on this project, develop three specific models for fruit fly to test the ACERA framework. These will case study:

- citrus from Central Burnett (for the replacement of dimethoate and fenthion)
- tomatoes/capsicum from Bowen (for the replacement of dimethoate and fenthion)
- produce from South-east Australia (under temporary PFAs, ALPPs and possibly PFPPs - see Project 11)

Document within these models the expected efficacy of the system, realistic pathways to adoption and timeframes for acceptance by domestic markets. Using these models as the basis, hold a workshop to gain agreement on a standardised approach to the analysis, endorsement and application of systems approach for fruit fly.

PROJECT 11 - NATIONAL APPROACH TO PFA, ALPP and PFPP FOR MARKET ACCESS

Use international standards to enhance and document operational guidelines (National Standards) for establishing Pest Free Areas (PFAs), Areas of Low Pest Prevalence (ALPP), Pest Free Places of Production (PFPP) and Pest Free Production Sites (PS) for the management of fruit flies. This includes guidelines for:

- managing PFAs (including the practical standards and data fields needed to determine insect threshold criteria as per the International Standards for Phytosanitary Measures (ISPM) number 26 - Establishment of pest free areas for fruit flies [Tephritidae])

- managing ALPPs (ISPM 30 - Establishment of areas of low pest prevalence for fruit flies [Tephritidae]).

Standards for managing PFPP/PS are under development as part of a draft ISPM on systems approaches for Tephritid fruit fly. This project will finalise revised Codes of Practise (COP) for the establishment of area freedom for Med-fly and Q-fly, which include these elements of management.

The operational guidelines will be developed on a production region basis, promoting the application of consistent management measures within bio-geographical regions of equivalent risk profile, and meet relevant international standards. Their national endorsement will be secured.

Processes and timeframes will be developed to implement PFA, ALPP, and PFPP/PS status by domestic trading partners in the first instance and international markets in the longer term.

The systems that underpin export certification of fruit fly area freedom are necessarily complex and multi-jurisdictional. The integrity of the systems is critical to maintenance of ongoing trade and developing new markets. A national verification model for pest free areas for fruit fly will be developed that will include audit and verification arrangements for PFA, ALPP and PFPP/PS to assure the integrity of these areas for domestic and international phytosanitary certification.

Drawing on the National Standards for PFAs, ALPP, and PFPP/PS (and others i.e. systems approach and AWM) and the national verification model that assumes their integrity, develop and implement management strategies for specific regional areas, for example:

- the Riverina and other inland regions of NSW (e.g. Guyra, Jemalong, Orange, Young, Batlow)
- Northern Victoria
- Applethorpe and Stanthorpe, southern Queensland (avocadoes)

These strategies will ensure an equitable sharing of responsibility for fruit fly management whilst providing producers with greater opportunity to access international fruit fly sensitive markets. They will define pest threshold criteria and suppression/control methods that will enable surrounding areas and areas of similar fruit fly profile to be maintained as an ALPP in order to buffer the PFA from fruit fly incursions. If this approach is successful, the strategy will be expanded to other areas in the tri-state region and Australia.

PROJECT 12 - HARMONISATION OF FRUIT FLY INTERSTATE CERTIFICATION ARRANGEMENTS

Harmonisation of all domestic fruit fly ICAs, taking into account international standards, national standards and pest risk analysis.

PROJECT 13 - PROVISION OF MARKET ACCESS INFORMATION

Ensure both government and industry stakeholders can easily access all market access phytosanitary requirements for horticultural produce destined for both domestic and international markets. In order to support this information and increase awareness of market access processes, consolidate, document and present to all stakeholders:

- The steps and processes involved in gaining and maintaining market access;
- The roles and responsibilities of the key stakeholders in gaining and maintaining market access;
- The risk analysis process.

PROJECT 14 - FRUIT FLY RESEARCH AND DEVELOPMENT PRIORITIES

On a regular basis, generate a fruit fly research priority guide, using information gathered from:

- A review of market access requirements (Project 13);
- A gap analysis of the production supply chain;
- Outputs from each of the projects identified in this plan.

Integrate this prioritisation process with the proposed PISC R&D agenda and use it to inform priorities of research providers including Horticulture Australia Ltd.

PROJECT 15 - COORDINATED NATIONAL FRUIT FLY AWARENESS/COMMUNICATIONS

Coordinate current efforts around Australia to raise awareness of the impacts of fruit flies and encourage attitudinal and behavioural change with respect to fruit fly management. This will include the development of a national communication strategy that will analyse current awareness activities, identify possible synergies between agencies' and propose communication messages delivered in collaboration by a central coordinating agency.

GOVERNANCE STRUCTURE

In addition to the 15 projects, the NFFS IC has also recommended the establishment of a 'National Fruit Fly Governance Body' (NFFGB). This body will be responsible for maintaining oversight of the strategy and its goals of improving national management of fruit flies in Australia, particularly through the implementation of the projects outlined in this Action Plan. The governance body will actively guide and measure the progress of each of the 15 projects, continuing to analyse the fruit fly management system, and propose relevant measures to address any areas of concern. This body will be closely linked with other relevant parties, to perform a critical coordination role.

INVESTMENT PLAN

To compliment the draft Action Plan, the NFFS Implementation Committee proposes to commission further economic analysis of the specific projects. This will outline general benefits to growers, government agencies and the wider community and form the basis of an investment plan that will match actions with costs and benefits.

1. BACKGROUND

Fruit flies are the world's most economically significant pest of horticulture[1] and attack a wide range of fruit and vegetables throughout the world's climatic zones. Through various risk analyses undertaken to date, some 46 species of fruit fly, both endemic and exotic, have been identified as significant economic threats to Australian horticultural crops[2]. The majority of these species are exotic to Australia, however many are found in close proximity through out South-East Asia and the South Pacific. In addition, Australia has a number of endemic and established species. Two in particular, the Mediterranean fruit fly (*Ceratitis capitata*), which permanently inhabits the southern growing regions of Western Australia, and the Queensland fruit fly (*Bactrocera tryoni*), found in parts of the Northern Territory, Queensland, New South Wales and the eastern corner of Victoria. These species have a significant economic impact increasing costs of fruit production and market access.

Fruit flies damage fruit by laying eggs in the fruit or on the outside skin. Larvae emerge from the eggs and immediately burrow into and feed on internal structures of the fruit. Bacterial infection often results in the partial or complete degradation of the commodity. Larvae eventually emerge at the surface of the fruit and drop to the ground where they pupate in soil until they emerge as adults. Fruit fly life cycles vary according to species and environmental conditions. Tropical species can have many generations each year whilst temperate species tend to have a single generation per year. Life cycles can be completed in three to five weeks in favourable conditions for some species.

The application of biosecurity measures to manage fruit flies in the field and in trade is a significant cost to industry and government. The average annual value of fruit fly susceptible Australian Horticulture is $4.8 billion, with roughly 25% traded interstate. The average value of Australian fresh fruit exports from fruit fly susceptible crops is nearly $500 million. Over the five year period from 2003-2008, Australian industry and government invested more than $128 million in the management of fruit flies. This estimate did not include the costs to growers in fruit fly endemic areas of Australia for managing crops to prevent infestation and generate a product fit for both sale and consumption.

Fruit flies present a significant phytosanitary threat to horticulture and can have a major impact on Australia's capacity to trade competitively in international horticultural markets. As a result, it is critical that fruit fly species are adequately managed to ensure producers can maintain, enhance and develop access into domestic and international markets.

Fruit flies do not recognise commercial, domestic or state regional boundaries and jurisdictions. They are highly mobile, capable of flying short distances and being transported long distances. They

[1] For the purpose of this report, horticulture covers all fruit fly affected commodities including grapes (viticulture).

[2] As part of Project 2 a comprehensive risk analysis of all fruit flies of significance to Australia will be undertaken. This analysis will inform a number of other projects and future fruit fly management activities.

also have the potential to infect a wide range of crops from mangoes to apples and tomatoes to grapes. Also, unlike many other plant pests, the management of these pests cannot be conducted solely on farm and the loss of control on a particular property can have a wide implication for commercial regions and the wider community.

Given the significant value of the crops affected and the adverse impact the pest can have on production and market access, the effective management of fruit fly is of central concern to Australia's horticultural industries.

2. CURRENT MANAGEMENT ARRANGEMENTS

Australia has a sophisticated management system that facilitates both the domestic interstate movement and international export of horticultural commodities. The system is designed to deliver high quality fruit to the consumer that is unaffected or damaged by fruit flies and other pests.

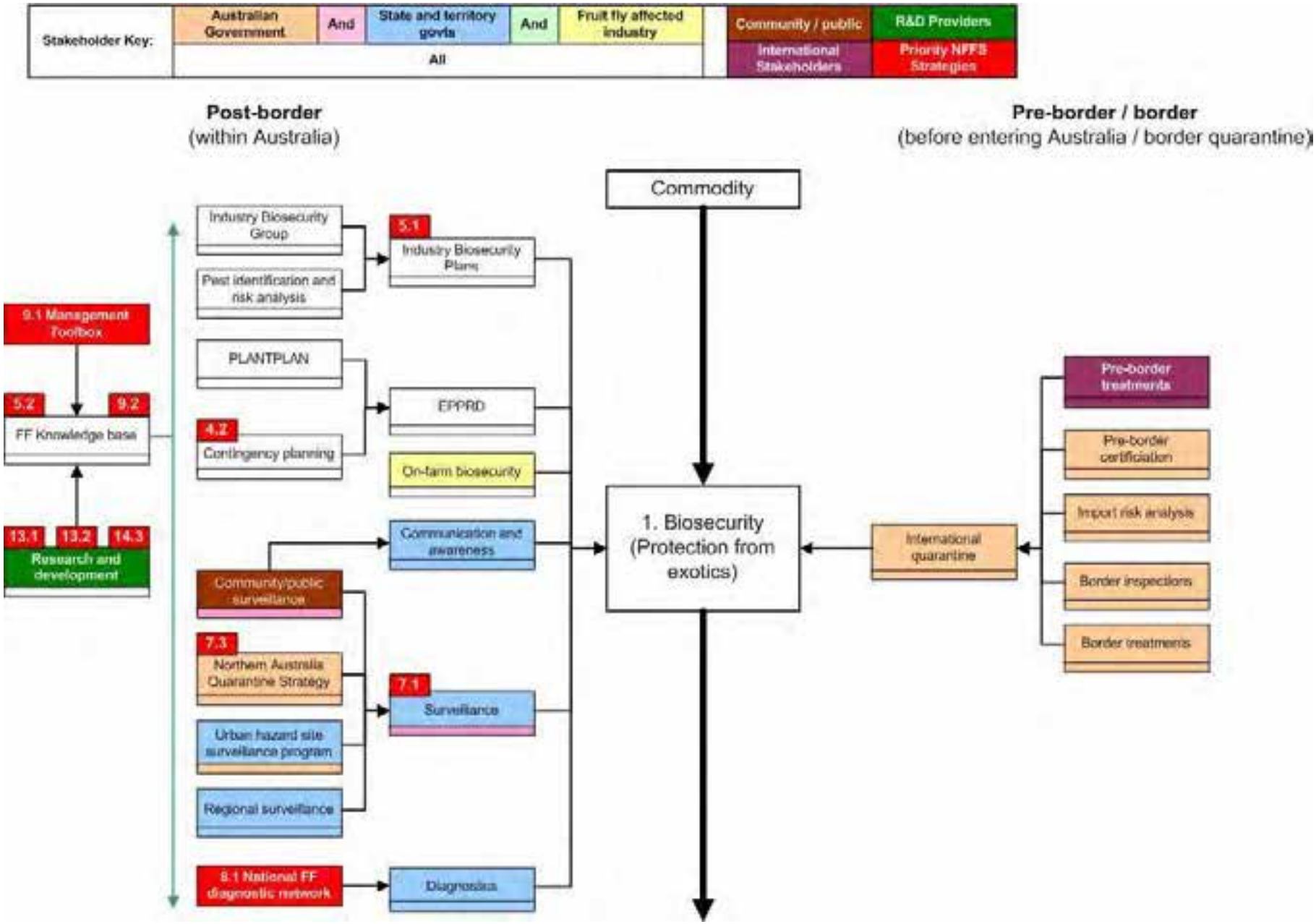
The management of fruit flies in Australia is undertaken by a broad range of stakeholders across an equally broad range of crop specific activities and processes that include: early warning surveillance to prevent exotics entering Australia; spraying of crops to reduce the impact on fruit flies on yield and quality; cold or heat treatment of fruit after harvest in-order to meet phytosanitary trade standards; maintenance of fruit fly pest free areas; and the negotiation of market access into countries free of fruit flies.

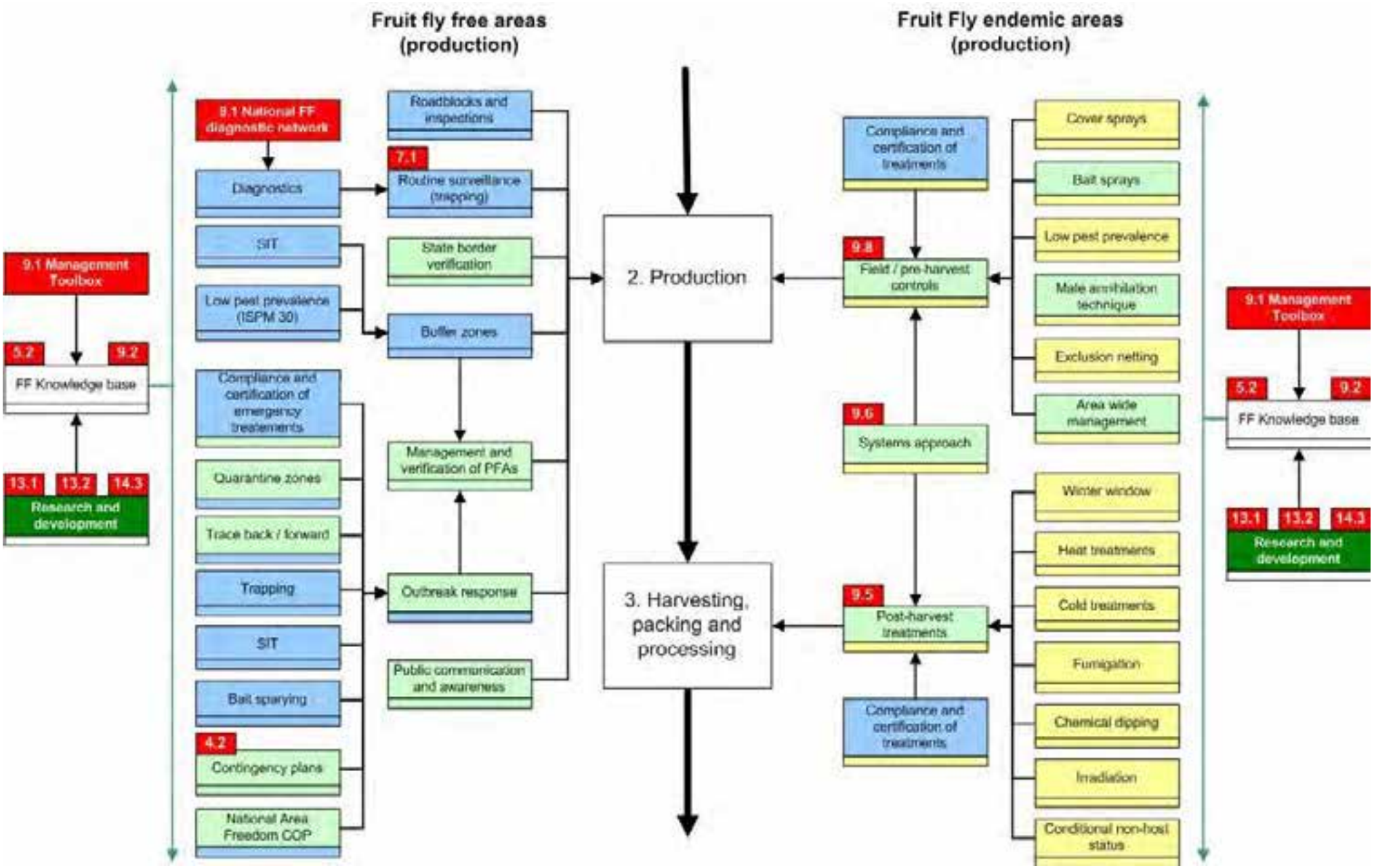
An overview of the current management of fruit flies in Australia from a commodity supply chain perspective is presented in Figure 1. The flowchart illustrates that the management of fruit flies extends from pre-border surveillance systems and a range of pre-harvest and post-harvest control systems to a sophisticated interstate and export certification system. For example, in some regions pest free areas (PFAs), have been established to protect commercially important growing regions where fruit flies are absent but there is risk of infestation.

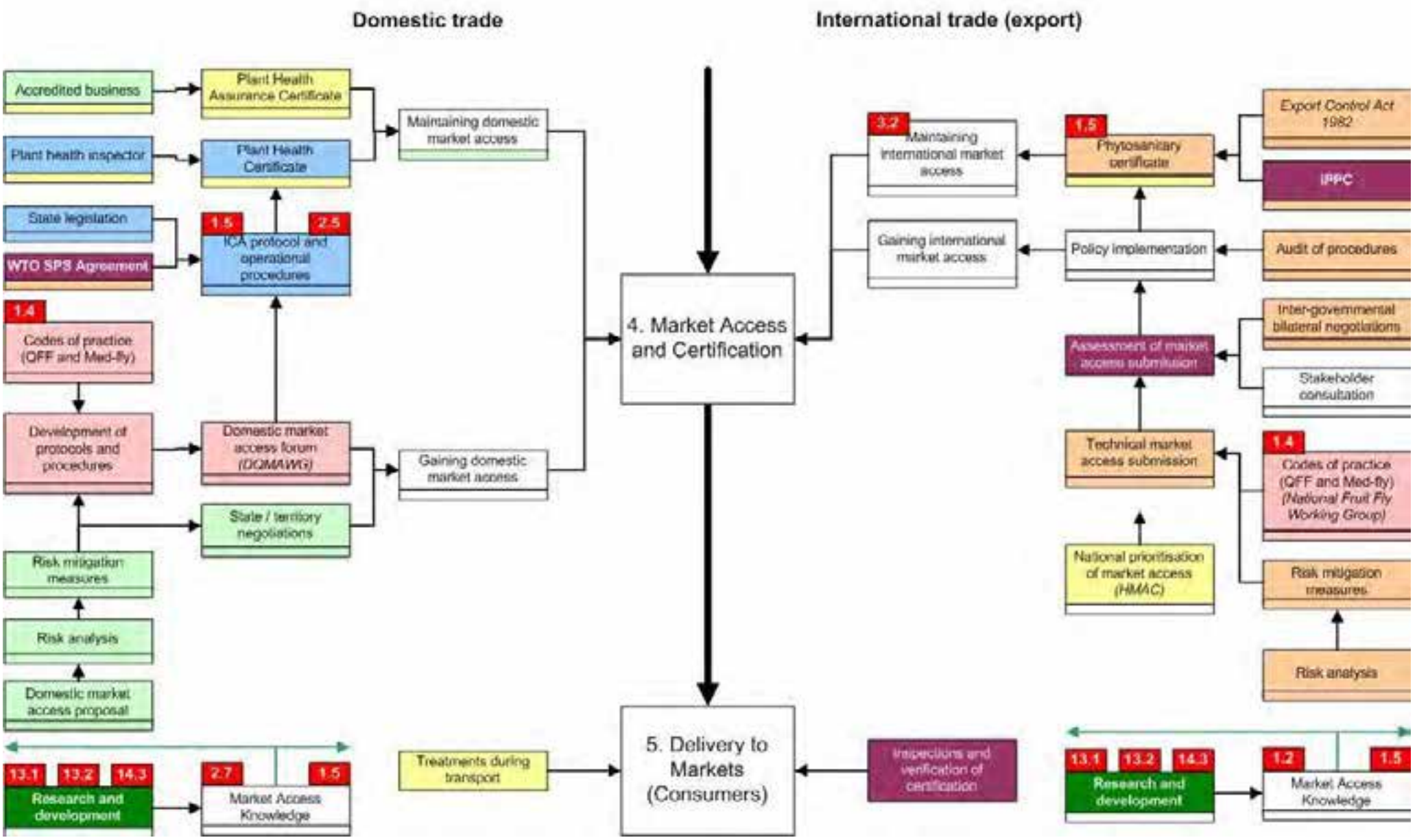
Each box described in the diagram represents a specific process. The colour of each box indicates which industry, community or government entity contributes to the process (in accordance with the stakeholder key provided). The colour of the thin bar underneath each box indicates the stakeholders that currently fund or provide financial support for the process. The red boxes represent the 21 strategies that were prioritised by the NFFS IC during their review of the Strategy (Chapter 5).

The horticulture commodity supply chain (which was peer-reviewed by both government and industry stakeholders) was considered and reviewed by the NFFS IC when determining how to effectively implement the NFFS ‘strategies’ into specific operational processes.

FIGURE 1. FRUIT FLY MAMANGEMENT PROCESSES ALONG THE COMMODITY SUPPLY CHAIN (GENERIC)




Fruit fly free areas (production)
Fruit Fly endemic areas (production)
9.1 National FF diagnostic network
Diagnostics
SIT
Low pest prevalence (ISPM 30)
Compliance and certification of emergency treatements
Quarantine zones
Trace back / forward
Trapping
SIT
Bait spraying
4.2
Contingency plans
National Area Freedom COP
Roadblocks and inspections
7.1
Routine surveillance (trapping)
State border verification
Buffer zones
Management and verification of PFAs
Outbreak response
Public communication and awareness
9.1 Management Toolbox
5.2
9.2
FF Knowledge base
13.1
13.2
14.3
Research and development
2. Production
3. Harvesting, packing and processing
Compliance and certification of treatments
9.8
Field / pre-harvest controls
9.6
Systems approach
9.5
Post-harvest treatments
Compliance and certification of treatments
Cover sprays
Bait sprays
Low pest prevalence
Male annihilation technique
Exclusion netting
Area wide management
Winter window
Heat treatments
Cold treatments
Fumigation
Chemical dipping
Irradiation
Conditional non-host status
9.1 Management Toolbox
5.2
9.2
FF Knowledge base
13.1
13.2
14.3
Research and development


Domestic trade
International trade (export)
Accredited business
Plant Health Assurance Certificate
Plant health inspector
Plant Health Certificate
Maintaining domestic market access
State legislation
WTO SPS Agreement
1.5
2.5
ICA protocol and operational procedures
1.4
Codes of practice (QFF and Med-fly)
Development of protocols and procedures
Domestic market access forum (DOMAWG)
Gaining domestic market access
State / territory negotiations
Risk mitigation measures
Risk analysis
Domestic market access proposal
13.1
13.2
14.3
Research and development
2.7
1.5
Market Access Knowledge
4. Market Access and Certification
5. Delivery to Markets (Consumers)
Treatments during transport
Inspections and verification of certification
3.2
Maintaining international market access
Gaining international market access
1.5
Phytosanitary certificate
Policy implementation
Assessment of market access submission
Technical market access submission
National prioritisation of market access (HMAC)
Export Control Act 1982
IPPC
Audit of procedures
Inter-governmental bilateral negotiations
Stakeholder consultation
1.4
Codes of practice (QFF and Med-fly) (National Fruit Fly Working Group)
Risk mitigation measures
Risk analysis
13.1
13.2
14.3
Research and development
1.2
1.5
Market Access Knowledge

3. RISKS FACING CURRENT FRUIT FLY MANAGEMENT ARRANGEMENTS

The current fruit fly management system has evolved to support domestic and international market access for Australia's horticultural produce. However, over the last decade both governments and industries have experienced increasing technical requirements in order to access markets and decreasing financial resources to undertake these requirements resulting in increasing pressure on the continued, sustainable and effective trade of fruit fly host produce.

The National Fruit Fly Strategy identified a number of technical, financial and climatic risks facing the maintenance of hard won domestic and international market access and the continued protection of Australia's horticultural production systems from the impact of fruit flies. These have been taken into consideration in the development of this Action Plan. A summary follows[3]:

Risks to market access for horticultural produce

The ability to maintain market access is the most fundamental requirement for an industry to consider when establishing a new market for its product. The effective management of pest risks associated with trade in plants and plant products has become increasingly important over the last five years as many developing countries join the World Trade Organisation (WTO). This membership requires countries manage their imports in a manner consistent with the rights and obligations specific in the Agreement on the Application of Sanitary and Phytosanitary Measures (SPS Agreement). This agreement also recognises the international standards (ISPMs) set out under the International Plant Protection Convention, which contain several specific to fruit fly management. In many cases, this has lead to trading partners introducing or upgrading quarantine requirements, inturn requiring greater regulatory control and posing a threat to existing horticultural markets. As the demand for scientific data to underpin certification grows, these developments have placed increasing strain on Australia's ability to gain and maintain market access.

Risks to treatment and management options

The range of options available to producers for managing fruit flies, including pre-harvest, post-harvest, area freedom and eradication measures, are under threat as a result of increasing costs, varying chemical usage requirements, changing climate, consumer demands and regulatory arrangements. These options are critical for managing fruit fly and supporting market access and may be the only means of treatment available.

Risks from legal and regulatory frameworks

The legal and regulatory frameworks at the national and state/territory levels provide the mechanism through which consistent fruit fly management programs are delivered. However, many programs have been in place for years and may not have been supported by the level of evidence

[3] Further information on current risks and issues can be found in the draft NFFS.

required of modern arrangements - using proof of efficacy demonstrated through years and volume of successful trade outcomes as the basis for their ongoing use. Systematically reviewing existing trading options will help reduce costs to industry by removing variations in market conditions, and result in increased competitiveness and confidence in Australia's certification systems.

Risks to diagnostic capability

Further work is required to improve Australia's capacity and capability to diagnose both species complexes (as adults) and larvae. Undertaking diagnostic work remains expensive and time consuming and diagnostic services require continued support and investment. Accurate and rapid diagnostics provides the foundation for fruit fly management both for endemics and exotics, and any limitations in this area can affect the effectiveness of the broader biosecurity system.

Risk of exotic fruit fly incursions

There are a large number of exotic fruit fly species in countries throughout South-east Asia and the Pacific. These flies pose a significant threat to Australia's agricultural industries and Australia imposes strict border quarantine measures to prevent their entry. With no guarantee that border measures return a nil risk of entry of exotic species and the high risk of national spread of Asian species to the north of Australia, early detection surveys and other prevention and preparedness measures are vital to providing the best hope of successful eradication. Even so, eradication can be an extremely difficult and resource intensive activity.

Risks to management capacity

There are diminishing funding resources, now and in the longer term, for meeting current and future market access and biosecurity demands. A large number of the activities required to manage fruit fly, such as surveillance, diagnostics and research, remain highly resource intensive, whilst allocations in agricultural portfolios are decreasing. Increasing costs across all fruit fly management areas are placing further pressure on the ability to effectively management the pest. In addition, insufficient capacity (resources) and capability (expertise) has been identified in fruit fly research and development, worsened by a lack of national coordination and collaboration on key priority areas.

4. THE DRAFT NATIONAL FRUIT FLY STRATEGY

In recognition of the need to maintain, refine and enhance market access for horticultural commodities in response to the risks summarised in Section 3, a steering committee, supported by four subgroups, was established in 2006 to lead the development of a National Fruit Fly Strategy (NFFS).

Support and input from a broad cross-section of public and private stakeholders was invited, and with strong commitment from all parties, a draft NFFS was developed through three open forums over a period of 15 months. After approval by government and industry, the draft NFFS containing 20 recommendations underpinned by 80 strategies, was released publically by the Federal Minister for Agriculture, Fisheries and Forestry in November 2008.

The NFFS's recommendations give broad direction to major operational, policy and research and development areas, whilst individual strategies describe priority activities that need to be undertaken to achieve these recommendations.

In developing the NFFS, the steering committee established a set of statements defining the vision, goal, outcomes, objectives and critical success factors by which the quality, success and benefits of the NFFS could be measured. The executive summary from the draft NFFS is included in Appendix 1.

The Strategy is designed to offset the impact of fruit fly on horticultural industries, domestic and international trade and aiming to develop a viable, cost effective and sustainable national approach to fruit fly management with support and commitment from all stakeholders. A copy of the NFFS can be found on the Plant Health Australia website (www.planthealthaustralia.com.au).

5. IMPLEMENTATION PROCESS – LAYING THE FOUNDATION

To direct the implementation of the NFFS, an Implementation Committee was formed in late 2008 chaired by Mr Paul Hickey. The key task of this committee was the production of this NFFS Action Plan, which outlines the key initial steps required to deliver a sustainable system for the management of fruit flies in accordance with the recommendations outlined in the NFFS.

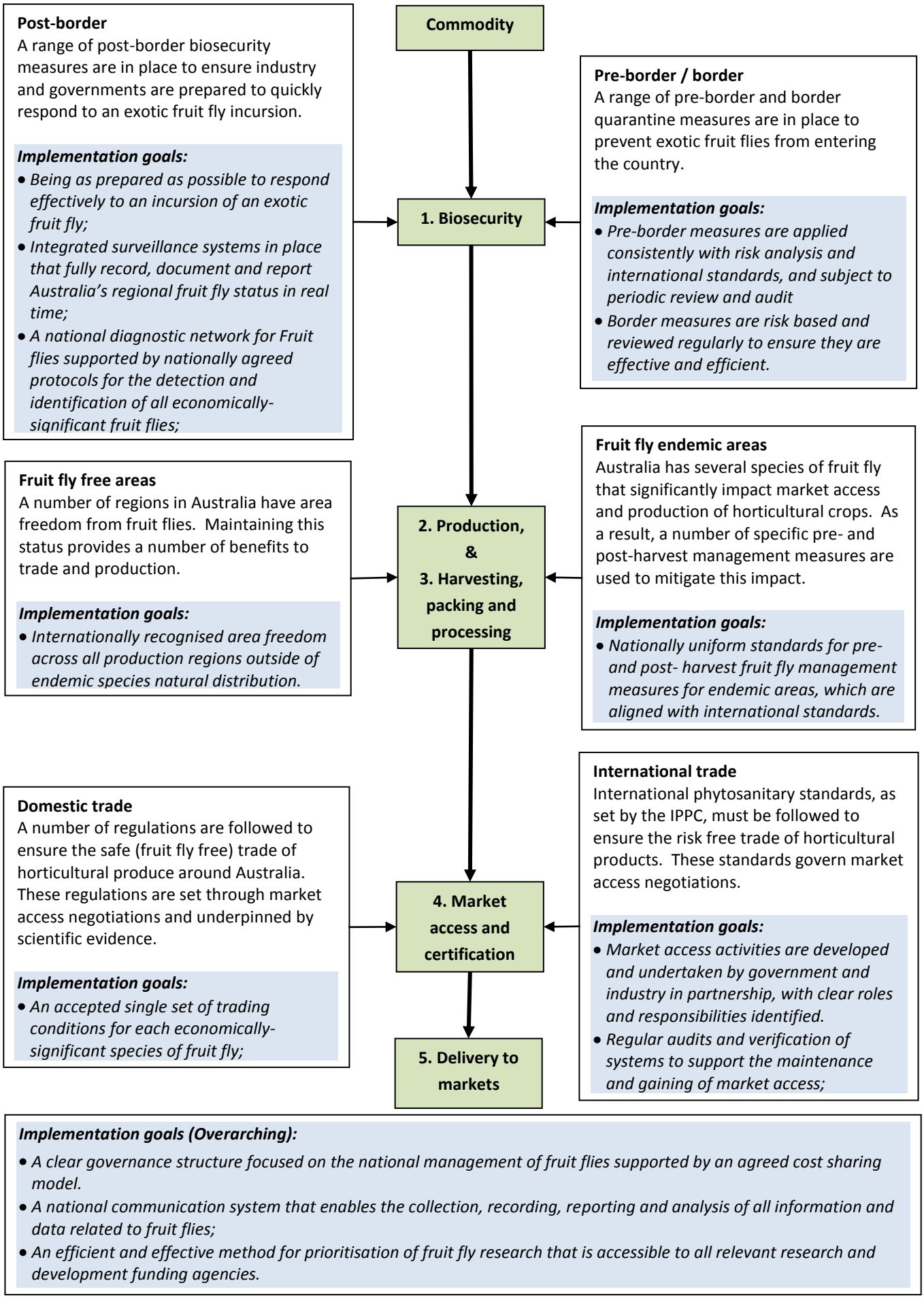
Over the course of several meetings the NFFS Implementation Committee established a set of goals that the Action Plan will aim to achieve at the end of the first 3 years of implementation. These goals are illustrated in context of the commodity supply chain in Figure 2.

To achieve these goals the NFFS Implementation Committee reviewed and prioritised all 80 strategies contained in the NFFS. The strategies of the highest priority were then used as the basis for establishing specific 'projects' that together will facilitate and implement a national approach to the enhanced management of fruit flies in Australia, and themselves provide a measure of the progress made towards implementing the NFFS. Feedback from a fruit fly technical workshop, held in October 2008 and attended by Governmental operational staff, was also presented to the committee and incorporated into this process. The projects are described in detail in Chapter 6.

BENEFIT COST ANALYSIS – PART 1

To provide some context to the draft NFFS, a Benefit-Cost Analysis (BCA) was undertaken to qualify the nature of the costs and benefits arising from implementing all 80 strategies proposed in the draft National Fruit Fly Strategy. For the purposes of undertaking this analysis it was assumed that all the strategies would be successfully implemented over a period of 5 years and their impacts would occur over at least the next 15 years. Full details of this analysis are given in a separate report: *"Economic assessment of the implementation of the proposed National Fruit Fly Strategy - Part 1".*

FIGURE 2. IMPLEMENTATION GOALS ALONG THE FRUIT FLY COMMODITY SUPPLY CHAIN



To facilitate the economic assessment process, the NFFS's recommendations and strategies were analysed to determine their influence on the management of fruit fly across six broad categories, namely:

- Benefits derived from improved market access and reduced market access costs in both export and domestic markets;
- Enhanced profitability and cost reductions resulting from improvements to fruit fly operational management practices such as pre-harvest and post-harvest treatments, and pest free areas management;
- Estimated benefits resulting from a reduction in production losses (quantity and quality) in fruit fly susceptible crops;
- Benefits resulting from more efficient and coordinated fruit fly management structures and improved research, extension and training activities;
- Benefits arising from improved emergency response arrangements, such as detection and eradication;
- Social benefits delivered to regional communities and the wider Australian public.

The BCA results, though they are based on conservative estimates of benefits and costs, showed that the implementation of the draft NFFS would yield positive expected net present benefits. Taking into account the measurable benefits considered in this analysis, the calculated NPV of implementing the NFFS is $429 million over 20 years, and, with an applied discount rate of 5%, results in a benefit cost ratio of 8.68:1.

If a higher discount rate of 10% was applied, the NPV of implementing the NFFS would be $291 million with a corresponding benefit cost ration of 7.72:1. The implementation of this national strategy can therefore be considered as a sound investment decision from an economic point of view. The summary of the benefit cost analysis of the NFFS is presented in Table 1.

TABLE 1. SUMMARY OF THE DRAFT NFFS IMPLEMENTATION BENEFIT COST ANALYSIS

ANNUAL BENEFITS		
Source of benefits		**Estimated value of benefits ($)**
Benefits from improved market access and reduced market access costs		10,000,000
Benefits from improved FF operational management practices		10,200,000
Benefits from reduced production losses in FF susceptible crops		13,800,000
Benefits resulting from more efficient and coordinated management structures and improved research, extension and training activities		5,100,000
Benefits from improved emergency response arrangements		1,600,000
Social benefits delivered to regional communities and the wider Australian public		Not quantified
Total		**$40,700,000**
NET PRESENT VALUE & BENEFIT COST RATIO		
	At 5% discount rate	**At 10% discount rate**
Net Present Value (NPV) ($)	429,000,000	291,000,000
Benefit Cost Ratio (BCR)	8.68 : 1	7.72 : 1

Following on from this publication, the analysis is being extended to consider the economic impact of implementing the specific projects and initiatives outlined in this Action Plan. This further analysis ('Investment Plan') will outline general benefits to growers, exporters, government agencies and the wider community.

THE HORTICULTURE MARKET ACCESS STRATEGIC PLAN

As the future of fruit fly management will continue to require a mutual partnership of both industry and state and federal jurisdictions, the NFFS Implementation Committee made reference to the current HAL Market Access R&D Strategic Plan (HAL 2009). This plan provides a proposal for multi industry market access related R&D expenditure for the period 2009/10 to 2013/14. The Plan describes new R&D programs seeking industry investment and identifies high priority areas (Table 2).

The Plan has the primary goal of providing R&D to gain and or maintain market access for the horticulture industry, being developed under the two broad categories of Systems Approaches and Postharvest Disinfestation.

Importantly, the Plan identifies a number of critical areas in which investment is required including the establishment and maintenance of fruit fly Pest Free Areas (PFAs), Areas of Low Pest prevalence (ALPP), Area Wide Management (AWM), the development of pre harvest phytosanitary components to develop systems approaches, development of data packages for tropical fruit flies and the use of irradiation.

The NFFS Implementation Committee recognised a number of significant, fruit fly-relevant initiatives proposed by industry in the HAL Market Access R&D Plan. Accordingly, many of the proposed industry initiatives fit well in the context of the NFFS and are referenced in this Action Plan.

CURRENT INITIATIVES

A number of important initiatives of direct relevance to the recommendations outlined in the NFFS began during its development or recently after it was completed. These initiatives are recognised in the development of this Action Plan and therefore the implementation of the NFFS.

NFFS INITIATIVES

The Federal Government has actively supported the development of the NFFS and (as part of its 2007 election commitment), allocated an initial $1 million in 2008 to support the implementation of the strategy. During 2009 these monies were used to gather and analyse fruit fly information held by the states and territories, industry and research organisations with the objective of developing a management tool kit, a national diagnostic standard and pest data sheets. Key activities are as follows:

The National Fruit Fly Diagnostic Standard project

The main objective of the project was to establish a nationally agreed standard for fruit fly diagnosis. This involved assessing and validating existing diagnostic tests as the starting point for a nationally accepted diagnostic standard. Facilitated by PHA, the project had been undertaken in conjunction with Australia's leading fruit fly scientists and diagnosticians, and will be completed in 2010. These scientists and diagnosticians will then form the foundation of the fruit fly diagnostics network.

The National Fruit Fly Body of Knowledge project (BoK)

This project aimed to bring together all fruit fly information, published and unpublished, industry and government, available in Australia. The information collected includes that relating to biology, ecology, surveillance, management, trapping, treatment, regulation and public awareness for Australia's most significant horticultural pest. This information will be held in a searchable central repository and subsequently migrated to the ABIN. More than 2,500 publications, research reports, data sets and articles have been collected, spanning more than 100 years.

ABIN AND INFORMATION SYSTEMS

The Australian Biosecurity Intelligence Network (ABIN) is a Commonwealth Government National Collaborative Research Infrastructure Strategy (NCRIS) funded initiative contributing to the provision of IT infrastructure for research, response, surveillance and risk analysis in Australia. The purpose of ABIN is to develop biosecurity information management tools, including a shared workspace, that allows individuals and groups to collaborate across industries and jurisdictions, sharing information, knowledge and materials.

Seven proof of concept projects have been outlined in the ABIN investment plan. Of these projects two have relevance to the management of fruit flies:

- ABIN will deliver search, sort and analysis tools and information management standards to be applied to unstructured data sets in secure and non-secure environments in the Fruit Fly Body of Knowledge repository (see previous).
- The establishment of a national web interface for routine surveillance and response to fruit fly incidents. Built on the national BioSIRT platform (see below), the project will allow researchers and state, territory and commonwealth authorities to view and update a common set of trapping and treatment records. This web-based capability will also allow rapid predictive modeling using rainfall, temperature and other kinds of spatial data.

BioSIRT (Biosecurity Surveillance Incident Response and Tracing system) is an information management system that has been developed by Australian governments for managing and recording emergency and routine biosecurity data. The web based software will be used by jurisdictions to enable information, such as the location of pest detections, to be collated in a consistent manner, stored and quickly exchanged between jurisdictions to coordinate responses and management activities.

TABLE 2 SUMMARY OF THE HAL MARKET ACCESS PLAN (NB PRIORITY 5 = HIGHEST)

Project	R&D Requirement	Research Priority 1-5 (5=Top)
Systems Approaches		
Market access data packages	• Develop pest specific data packages for various commodities as required	5
PFA/ALPP	• Maintain and improve current fruit fly PFAs under a national strategy; • Establish new PFAs as required; • Develop a national approach to the establishment of ALPP for fruit flies and other pests as appropriate.	5
AWM/ALPP	• Consolidation of Central Burnett; • AWM Queensland fruit fly on cherries; • AWM LBAM on apples, cherries, stone fruit and table grapes *(not Fruit fly)*	4
Disinfestation		
Alternative fumigant gases	• Pursue development and application of alternative fumigant gases.	5
Dimethoate data packages	• Develop residue data for APVMA review (expected to be completed 2010).	5
Post harvest oil dip	• Develop the use of post harvest oil dips.	4
Cold tolerance trials multi species	• Develop cold tolerance data for tropical fruit fly species.	5
FSANZ joint commodity approval	• Develop a submission and pay fees for FSANZ to consider a multi commodity request for the use of irradiation as a phytosanitary measure.	5
Irradiation disinfestation and fruit quality trials	• Refine pest specific dose rates and quality effects of irradiation on various commodities.	3
Alternative gases and chemicals	• To be determined.	4

OTHER INITIATIVES

Domestic Quarantine and Market Access website

The Domestic Quarantine and Market Access Working Group (DQMAWG) ensures that the development of domestic market access conditions for plants and plant products in Australia are technically justified, coordinated and harmonised and, consistent with Australia's international import and export market access conditions and policies.

The working group has developed a website that provides market access information to relevant stakeholders. This includes a database with information on all Interstate Certification Assurance procedures. It can be found at www.domesticquarantine.org.au.

Interstate Certification Assurance Workshop

Interstate Certification Assurance (ICA) is a system of plant health certification based on quality management principles. The scheme seeks to provide a harmonised approach to the audit and accreditation of businesses throughout Australia and the mutual recognition of plant health assurance certificates accompanying consignments of produce moving intrastate.

In February 2009 a workshop was held to provide an opportunity for industry and government to gain a mutual understanding of the ICA Scheme and allow discussion about the scheme and how it operates. This was followed by a workshop in 2010 that expanded awareness and knowledge of interstate trade arrangements.

NEXT STEPS

During 2009-10 a further $1 million has been allocated by the Australian Government to progress priority activities identified in the NFFS and the draft Action Plan. These are targeted towards activities that develop a national foundation for better fruit fly management. Specific projects focus on implementing integrated surveillance systems for fruit fly based on the BioSIRT recording and reporting framework developed during 2008-09 and standardising interstate certification arrangements based on a systems approach to managing the risk of spreading fruit fly in trade. Information for high priority and trade sensitive fruit fly species is being consolidated into standardised data sheets and the national fruit fly diagnostic network will be supported to define gaps and diagnostic need for further development and/or investment.

A case study for fruit fly management in the Riverina production district will be developed to identify enhanced market options using contemporary concepts including areas of low pest prevalence and smaller pest free areas along with a review of practices to develop a national position on the use of sterile insect technology (SIT) for managing endemic fruit flies.

A start has been made on collating a data set of fruit fly management methods and their efficacy from the BoK information as a precursor to developing systems approaches for trade. Initial analysis has been presented in the draft “Measures for fruit fly risk management” document.

6. IMPLEMENTATION ACTION PLAN

As introduced in Chapter 5, the IC carried out a review and prioritisation of the recommendations and strategies outlined in the draft NFFS. This was undertaken by:

- developing an understanding of the fruit fly commodity supply chain (pages 14-16)
- identifying the issues facing the management of fruit flies in Australia and establishing clear implementation goals (pages 17-21)
- considering results from a survey of IC members and stakeholders
- utilising expert opinion provided by the IC
- using some input provided by external consultants (specialists in decision making processes), and
- responding to constructive comments on this plan received as a result of consultation in late 2009.

This process enabled the development of a set of projects or initiatives designed to encompass the range of strategies outlined in the NFFS. These projects are set out in fifteen tables (pages 29-44).

Each table identifies:

- the aim of the project;
- the expected outcomes and benefits of the project;
- a description of the rationale for undertaking the project;
- activities that have been undertaken to date to progress the goal;
- the area in the supply chain which the project is expected to impact and the associated goal;
- the NFFS strategies that the project will contribute to the achievement of; and
- the specific tasks that will need to be undertaken to achieve the project.

Actioning of projects

The projects are presented in the order they impact on the commodity supply chain, (from pre-border protection through to export market access, Figure 2), and are designed, when implemented together, to deliver a new fully integrated, national system for the sustainable management of fruit flies in Australia.

It is the view of the Implementation Committee that to effectively implement a national approach to fruit fly management, the projects within this Action Plan should be considered as an integrated package. If the projects are considered in isolation it is possible that the integrity of the supply chain could be compromised and the functionality of the future fruit fly management system could be undermined.

However, the IC also recognised that some projects and tasks would benefit from being implemented quickly (1 – 2 years) to address current issues, whilst others should be completed over a longer time period in a complementary and logical sequence. For example, Project 8 is vital for addressing the potential change of use for disinfestation chemicals such as dimethoate and fenthion and therefore should be instigated immediately.

Further assisting implementation, the projects and initiatives are grouped according to biosecurity themes, namely:

Theme	Projects
Fruit fly biosecurity	1, 2, 3
Fruit fly management	4, 5, 6, 7, 9, 11
Market Access	8, 10, 12
Communications and Awareness	13, 15
Research and development	14

Information management

As a result of the 15 proposed projects, a significant amount of information and data will be collated on the status of fruit fly and its management. The Implementation Committee has recognised this information has potential market access implications and recommends that it be collated and utilised with explicit approval from the relevant stakeholders, and where appropriate, relevant security requirements.

Fruit fly classification and terminology

The scope of each project (ie how many species of fruit flies it will cover) will be determined by a specific fruit fly risk analysis (undertaken as part of Project 2). This process will identify high priority fruit fly species under three categories:

- Exotic species – Species of fruit fly not currently established in Australia that are considered a high risk of introduction as a potential entry pathway exists (e.g. Papaya Fruit Fly).
- Economic endemic species – Species of fruit fly native to or established in Australia that have significant economic impact on either production or market access (e.g. Queensland Fruit Fly).
- Non-economic endemic species – Species of fruit fly native to or established in Australia, such as Island Fly, that are not recognised as being economically important as they do not adversely impact the yield or quality of fruit but may occasionally be exported in damaged fruit and attract the attention of trading partners.

In order to provide context for this Action Plan, risk analyses to date[4] have identified 46 High Priority species of fruit fly. These include: 36 exotic species; 2 economic endemic species; and, 8 non-economic endemic species. It is considered likely the risk analysis proposed under Project 2 will identify a similar number of high priority species across the three categories.

[4] Undertaken by experts as part of the development and review of relevant Industry Biosecurity Plans.

PROJECT 1 **NATIONAL DATA SHEETS FOR HIGH PRIORITY SPECIES.**

Develop species specific data sets for all exotic and endemic high priority species (identified through the risk analysis proposed in project 2).

Building on the data sheets developed through the Fruit Fly Body of Knowledge project (BoK) and accessing relevant BoK data, process all fruit fly data into the agreed datasheet format before undertaking a gap analysis to identify potential areas where further work is required to improve, validate and publish it.

Store all information in an appropriate electronic format e.g. ABIN, PaDIL.

Outcomes:	In depth information on priority fruit fly species available to all relevant stakeholders.
Benefits:	Consistent, comprehensive datasheets will allow improved planning and risk analysis, improved emergency response actions, and the more consistent application of management measures across fruit flies species. • Improvements to operational management practices. • More efficient and coordinated fruit fly management structures. • Improved emergency response arrangements.
Description:	In order to achieve successful surveillance, eradication, field control, systems approaches, management and policy outcomes, the physiological, behavioural and ecological processes relating to the wide range of high priority fruit fly species that could impact on Australian horticulture needs to be fully understood.
Current activities:	• Standard format for fruit fly species data sheets agreed by PHC (2009). • Data sheets prepared for Qfly, Medfly, Island Fly and 4 *Bactrocera* spp from Body of Knowledge project. • Range of data collated by Biosecurity Australia for a number of economic fruit fly species for risk analysis.
SC area and goal met:	All
NFFS Priority strategies:	Strategy 5.2 - Generate the required biological data to provide the basis for the effective management of endemic and non-endemic fruit fly species. Strategy 2.7 **-** Need to ensure capacity is available to deal with 'non-economically significant' fruit fly species should the need arise.
Other strategies supported:	9.2, 11.2
Tasks	1. Review coverage of existing data sheets, converting these to the agreed format. Store them in an electronic repository (e.g. PaDIL) that allows access when required. 2. Review and process (electronically) information collated through FF BoK project, using it to update existing data sheets or form the basis of new data sheets. 3. Identify gaps within existing and new data sheets and across species coverage, using this as the basis for further research (R&D Prioritisation – Project 14). Where gaps clearly exist from the outset, prioritise research in these areas immediately.

PROJECT 2 **NATIONAL BIOSECURITY PLAN FOR FRUIT FLIES**

Develop a National Biosecurity Plan for fruit flies that will include:

- A risk analysis of all endemic and exotic fruit flies that could affect Australian horticultural industries;
- Biological and ecological data on all high priority species (see project 1);
- Diagnostic protocols (see project 3) and contingency plans for high priority species;
- Relevant preparedness and prevention measures (e.g. on-farm biosecurity practices);
- Surveillance and detection strategies (see projects 4 and 5);
- Technical management information (e.g. chemical usage).

Use the biosecurity plan as the basis for preparedness activities including the preparation of specific fruit fly BioSIRT templates and development of incursion-simulation training packages that can be used by stakeholders as required.

Outcomes:	A new biosecurity plan that will be used specifically to aid industry and government to prevent and prepare for a potential fruit fly incursion.
Benefits:	Improved preparedness and ability to respond to both internal and external fruit fly incursions. • Improved emergency response arrangements.
Description:	IBP's enable structured consideration of key fruit fly threats and provide information to support mitigation activities in the areas of prevention, detection and eradication.
Current activities:	• Relevant Industry Biosecurity Plans (Tropical IBP to be reviewed in 2010/11) • Contingency plans for fruit flies based on four lure response systems and three incursion simulation scenarios (July 2009). • Development of a National Fruit Fly diagnostic standard and associated networks (see Project 3) (2009/10). • On-farm biosecurity website and program. • Development of priority pest list methodology by the Australian Centre of Excellence for Risk Analysis (ACERA) in association with Biosecurity Australia. • ISPM No. 02 - Framework for pest risk analysis • ISPM No. 09 - Guidelines for pest eradication programmes • ISPM No. 11 - Pest risk analysis for quarantine pests including analysis of environmental risks and living modified organisms • Current Import Risk Analyses (IRAs)
SC area and goal met:	1. Biosecurity, post-border • *Being as prepared as possible to respond effectively to an incursion of an exotic fruit fly.*
NFFS Priority strategies:	Strategy 5.1 - Support Industry Biosecurity Plans as a planning tool to help implement biosecurity strategies. Strategy 4.2 - Develop nationally agreed contingency plans for high risk fruit fly species or complexes.
Other strategies supported:	2.7, 4.1, 4.4, 5.3, 11.2
Tasks	1. Use the reviewed risk analysis process (ACERA) to characterise and prioritise endemic and exotic fruit flies that could affect Australian horticultural industries. 2. Drawing on existing IBPs and documentation, develop a fruit fly Industry Biosecurity Plan that will be housed electronically (on ABIN for example). 3. Based on the fruit fly contingency plans, prepare specific fruit fly emergency response templates for BioSIRT. 4. Develop national tools that will enable fruit fly simulation exercises and training to be undertaken by relevant stakeholders.

PROJECT 3 **NATIONAL FRUIT FLY DIAGNOSTIC STANDARDS AND NETWORKS**	
Establish a nationally agreed standard for fruit fly diagnosis. Building on existing work in this area, establish and maintain a national diagnostics network that identifies relevant national and international experts, laboratories and centres of expertise, essential equipment and reference collections and provides the necessary tools to promote communication and collaboration.	
Outcomes:	A single national reference document for the diagnosis of high priority fruit fly species. A national fruit fly diagnostic network supported by trained and skilled personal.
Benefits:	Improved ability to detect fruit fly incursions, support for market access, and more effective management (reduced costs). • Improved market access • Improvements to operational management practices. • Improved emergency response arrangements.
Description:	The establishment of a national diagnostic network is essential in order to spread resource requirements and increase capabilities. To support this system, nationally agreed diagnostic standards are required that incorporate both morphological and molecular techniques, with further research targeted at current gaps.
Current activities:	• SPHDS activities and mandate. • Diagnostic quality fruit fly images and current diagnostic protocols in the PaDIL toolbox. • Development of a National Fruit Fly Diagnostic Standard. • Remote diagnostic network (microscopy) under development through the CRC NPB. • Existing AQIS and state diagnostic networks • ISPM No. 27 - Diagnostic protocols for regulated pests
SC area and goal met:	1. Biosecurity, diagnostics & 2. Production, diagnostics • *A national diagnostic network for fruit flies supported by nationally agreed protocols for the detection and identification of all economically-significant fruit flies.*
NFFS Priority strategies:	Strategy 8.1 - Establish a national diagnostic network that enables effective and rapid diagnosis of both endemic and exotic fruit fly species across jurisdictions.
Other strategies supported:	8.2, 11.2
Tasks	1. Once the current project to establish a nationally agreed standard for the diagnosis of fruit flies is complete, undertake a gap analysis to determine where further work is required. 2. Establish a national fruit fly diagnostic network addressing the need to ensure the maintenance of fruit fly diagnostic expertise and infrastructure. The network needs to identify necessary morphological and molecular experience and essential infrastructure including equipment and reference collections.

PROJECT 4	**MAPPING AUSTRALIA'S FRUIT FLY STATUS**
Ensure all current and future fruit fly surveillance programs are captured in BioSIRT, and where possible, past data. Use this information to establish a 'national map' of surveillance activities that is capable of presenting the status of all high priority species in real time.	
Outcomes:	A national overview of fruit fly prevalence that leads to the more effective and efficient placement and operation of surveillance arrays across the country and greater support for market access and export certification processes.
Benefits:	A better understanding of the prevalence of fruit flies will improve the coordination of management programs at both a regional and national level. This in turn will support market access and improve the effectiveness of management practices. • Improved market access • Improvements to operational management practices. • More efficient and coordinated fruit fly management structures. • Improved emergency response arrangements.
Description:	Currently, the surveillance network of traps for fruit flies is made up of a number of programs that can not be centrally interrogated. Capturing of relevant information in a networked database will improve real time decision making, support market access and build data on the distribution of fruit fly to assist in risk mitigation strategies.
Current activities:	• BioSIRT • National Plant Surveillance Reporting Tool (NPSRT)
SC area and goal met:	1. Biosecurity, surveillance & 2. Production, surveillance. • *Integrated surveillance systems in place that fully record, document and report Australia's regional fruit fly status in real time;* • *Internationally recognised area freedom across all production regions outside of endemic species natural distribution.*
NFFS Priority strategies:	Strategy 7.1 - Develop a national approach to fruit fly surveillance systems that incorporates state and local levels and caters for both endemic and exotic species.
Other strategies supported:	7.2, 7.3, 11.2, 19
Tasks:	1. Identify all past and present fruit fly trapping and surveillance programs across Australia and ensure these are captured in BioSIRT. 2. Drawing on this information through the IT architecture (such as ABIN), create a tool that can generate a real time, national perspective ('map') on fruit fly prevalence.

PROJECT 5 **INTEGRATED NATIONAL FRUIT FLY SURVEILLANCE SYSTEM**

Review current fruit fly surveillance practices against both domestic and international standards, particularly focusing on surveillance techniques, trapping tools and data interpretation methods. Document the practices in the form of agreed national standards for the surveillance of fruit flies.

These national standards will be designed to meet market access requirements, including export certification, early detection and emergency response outcomes. Ongoing management of the system will include mechanisms for identifying development needs and fostering innovation and efficiency through research and development, across all elements of the surveillance continuum.

Outcomes:	Nationally consistent standards for the surveillance of fruit flies, that in-turn lead to the more effective and efficient placement and operation of surveillance arrays across the country.
Benefits:	Consistent and internationally recognised surveillance practices will support market access, improved management outcomes and reduced inefficiency, whilst encouraging greater innovation. • Improved market access. • Improvements to operational management practices. • More efficient and coordinated fruit fly management.
Description:	Surveillance is crucial for maintaining access to both domestic and international markets whilst also protecting Australian horticulture from exotic fruit fly threats. Undertaking surveillance however, is a resource intensive activity. Therefore, continued development of surveillance techniques and tools is critical to enhancing our ability to capture a wide range of high quality information in an accurate and cost effective manner.
Current activities:	• Surveillance Reference Group (SRG) and mandate. • Surveillance standards are in place through the draft Codes of Practice. • Trapping requirements are identified in emergency response contingency plans. • IAEA (2003) Trapping guidelines for area-wide fruit fly programmes • ISPM No. 06 (1997) Guidelines for surveillance
SC area and goal met:	1. Biosecurity, surveillance & 2. Production, surveillance. • *Integrated surveillance systems in pace that fully record, document and report Australia's regional fruit fly status in real time;* • *Internationally recognised area freedom across all production regions outside of endemic species natural distribution.*
NFFS Priority strategies:	Strategy 7.1 - Develop a national approach to fruit fly surveillance systems that incorporates state and local levels and caters for both endemic and exotic species.
Other strategies supported:	2.3, 2.4, 2.6, 7.2, 7.5, 7.6, 7.7
Tasks:	1. Review current surveillance practices and develop national standards for fruit fly surveillance. 2. Continue to develop and monitor 'national map' (project 4) of surveillance activities under the leadership of the Surveillance Reference Group of the national Plant Health Committee. 3. Identify gaps, and innovation and efficiency needs.

PROJECT 6 **MAINTAIN THE TORRES STRAIT FRUIT FLY DETECTION AND ERADICATION PROGRAM**

The Torres Strait fruit fly program combines routine early detection surveillance with eradication activities to prevent the entry and establishment of a number of target economic fruit flies on the Australian mainland.

Continue support for the long-term Torres Strait containment program to minimise seasonal incursions of non-endemic fruit fly species through natural spread into northern Australia, and undertake select initiatives to enhance it. In particular, undertake:

- a review of the current area of operation and high risk entry points to ensure the program continues to effectively protect Australia against fruit fly threats present in South-east Asia.
- a comprehensive BCA of the program, align program delivery and funding with other detection and eradication programs and secure on-going funding through an agreed cost-sharing arrangement.

Outcomes:	Continuation of the highly effective and cost efficient fruit fly program, enabling early detection and eradication of small populations of exotic fruit flies in the Torres Strait
Benefits:	The Torres Strait program prevents exotic fruit flies entering Australia by protecting a high risk entry pathway. The program regularly picks up exotic species which may have entered Australia and could have had a significant impact. • Improved market access • Improved emergency response arrangements • Reduced production losses.
Description:	The fruit fly program utilises a network of traps across the islands in the Torres Strait to detect a number of economic fruit flies that may spread into the area on monsoonal winds. The traps are managed and cleared by AQIS in partnership with Queensland. When a threshold number of exotic flies are detected, a national cost sharing arrangement between all Australian governments funds an eradication program.
Current activities:	• Program has been in place for more than a decade, costing less than $200,000 per annum for eradication activities. No residual populations of target fruit flies remain in the Torres Strait.
SC area and goal met:	1. Biosecurity, surveillance. • *Integrated surveillance systems in pace that fully record, document and report Australia's regional fruit fly status in real time;*
NFFS Priority strategies:	Strategy 7.1 - Develop a national approach to fruit fly surveillance systems that incorporates state and local levels and caters for both endemic and exotic species.
Other strategies supported:	7.2, 7.3
Tasks:	1. Undertake a review of the current area of operation and high risk entry points to ensure the program continues to effectively mitigate the risks posed by fruit flies in South-east Asia. 2. Conduct a comprehensive benefit-cost analysis to determine the true costs and true benefits from the program. 3. Align program delivery and funding with other detection and eradication programs in the national interest, including application of the Emergency Plant Pest Response Deed provisions where appropriate. 4. Secure ongoing funding for the program through agreed cost sharing arrangements, including contribution from beneficiary industries as appropriate.

PROJECT 7	**NATIONAL FRUIT FLY INFORMATION PORTAL**
Develop a portal that will provide necessary access to all relevant fruit fly information and provide a networked work space for communication and collaboration. This network will store information from the implementation of the strategy including diagnostic protocols, treatment schedules, pest data sets and national standards.	
Outcomes:	A portal to access information, a shared work space and a network for sharing information to enhance management of fruit fly and optimise support for market access.
Benefits:	A central, electronic fruit fly information repository will improve access to the best management practices, market information and other data to help: • Improve operational management practices. • Create more efficient and coordinated fruit fly management structures.
Description:	Australia is a large country with fruit fly related activities undertaken at many locations. Information and data generated through research, development, extension, regulation, policy, diagnostics and surveillance activities is currently held as disparate data sets. The gains that can be achieved through implementation of the NFFS will be almost impossible without access to this data and information.
Current activities:	• A significant amount of information has been captured through the Body of Knowledge project. • ABIN fruit fly proof of concept project.
SC area and goal met:	2. Production, FF free areas and FF endemic areas. • *Internationally recognised area freedom across all production regions outside of endemic species natural distribution;* • *Nationally uniform standards for pre- and post- harvest fruit fly management measures for endemic areas, which are aligned with international standards.*
NFFS Priority strategies:	Strategies 9.6, 9.5, 9.8 and 1.4 (see projects 5, 7, 8, 9 & 10).
Other strategies supported:	9.4, 11.2
Tasks:	1. Using a national fruit fly information portal (for example ABIN), create a repository for all information and data relevant to the management of fruit fly and critical to implementation of the NFFS 2. Develop the data management systems, standards and processes to order, search, store and retrieve fruit fly knowledge (potentially through the ABIN fruit fly proof of concept project), using data from the BoK as test information.

PROJECT 8 **NATIONAL STANDARDS FOR FRUIT FLY DISINFESTATION TREATMENTS**

Undertake a study on the range of post-harvest disinfestations treatments, for fruit flies and similar organisms, and current and future market access requirements. Use this study to recommend further research into current and new measures.

Document these measures as an Australian disinfestation treatment schedule for fruit fly. Once completed, secure its national endorsement. The schedule will outline nationally agreed treatment processes and standards, including their relevant efficacy so they can be applied to a range of varying crops depending on the particular region's fruit fly status.

Outcomes:	A single set of nationally consistent treatment standards for fruit fly post-harvest disinfestation, which are adopted by all governments and industries in a fruit fly treatment schedule.
Benefits:	Improved disinfestation treatments will allow more effective access to a wider range of both domestic and international markets, at a lower cost to the producer/exporter. • Improved market access • Improvements to operational management practices.
Description:	With the potential change to use patterns of chemical treatments such as dimethoate, fenthion and methyl bromide, effective alternatives that meet both domestic and international phytosanitary standards need to be developed. Targeted research is required to tailor disinfestation treatments and their use in the supply chain.
Current activities:	• Significant work in this area supported by a number of R&D funders and jurisdictions. • Treatment schedule using existing agreed disinfestation treatments completed. • Additional research identified through the BoK project. • Implementation of a National Response Plan: Responding effectively to changes in approved uses of dimethoate and fenthion. • Existing review of post-harvest treatments already conducted (QLD, NSW and WA). • ISPM No. 18 - Guidelines for the use of irradiation as a phytosanitary measure. • ISPM No. 28 - Phytosanitary treatments for regulated pests. • Measures for fruit fly risks management, draft, Kalang Consultancy Services
SC area and goal met:	2. Production, fruit fly endemic areas. • *Nationally uniform standards for pre- and post- harvest fruit fly management measures for endemic areas, which are aligned with international standards.*
NFFS Priority strategies:	Strategy 9.5 **-** Develop new or improved post-harvest disinfestations treatments.
Other strategies supported:	2.3, 2.4, 2.6
Tasks:	1. Drawing upon the FF Body of Knowledge work, undertake a review of current post-harvest disinfestation practices and schedules, in the context of current and future market access requirements. The review will identify work to date and its status as a potential standard against requirements in ISPM 28 2. Based on the above review, undertake focused research in agreed priority areas aimed at the development and improvement of current and new post-harvest disinfestation treatments where required. 3. Publish a post-harvest disinfestation treatment schedule for high priority fruit flies, which includes international standards.

PROJECT 9 **NATIONAL STANDARDS FOR FRUIT FLY MANAGEMENT SYSTEMS**

Review current field control and pre-harvest treatment measures for fruit fly (e.g. Area Wide Management) including an assessment of their efficacy. Based on this review develop efficacy or outcome standards for national agreement and implementation. Measures will provide options of a known efficacy for effective management and control of fruit fly across a wide range of situations and outcomes.

Commission a specific review of current Sterile Insect Technique (SIT) practices to develop a national position on the use of SIT for managing fruit flies in Australia. The review must consider the range of activities associated with the production and dispersal of the flies and take into account international best practice.

Develop appropriate measures for the effective management of abandoned orchards to minimise the risks they pose to effective control and management of fruit flies.

Outcomes:	Agreed management measures with known efficacy for the field control and pre-harvest management of fruit flies.
Benefits:	Improved management practices directly resulting in the reduced impact of fruit flies on production (yield and quality) and market access. Improvements to SIT will optimise its use as a tool to suppress fruit fly population in endemic areas and improve the ability to eradicate both endemic (from PFAs) and exotic fruit flies. • Improved market access (both fruit fly free areas and endemic areas). • Improvements to operational management practices. • Reduced production loses. • Improved emergency response arrangements (SIT).
Description:	Without effective pre-harvest control measures, fruit flies can have a significant impact on the ability to produce horticultural crops in endemic areas. With the potential change of use of chemicals such as dimethoate and fenthion, further research is required to develop effective control measures that not only reduce fruit flies' impact on yield and quality but also provide evidence of efficacy that will increase the confidence of fruit fly phytosanitary measures, improving access to sensitive markets. Greater emphasis on Area Wide Management and alternative treatments will increase market options for fruit fly endemic areas and more effectively manage this mobile pest. Abandoned orchards often present an unacceptable risk as a reservoir of fruit fly populations. Currently, the ability to manage these orchards is limited, disadvantaging commercial growers who have pest management programs in place. Effective legislation, regulations and management which enable the management of these sites to minimise the impacts of fruit flies is required.
Current activities:	• Significant work and investment in this area supported by a number of R&D funders and jurisdictions. • Central Burnett Area Wide Management program. • SIT facilities in both NSW and WA.
SC area and goal met:	2. Production, FF endemic areas. • *Nationally uniform standards for pre- and post- harvest fruit fly management measures for endemic areas, which are aligned with international standards.*
NFFS Priority strategies:	Strategy 9.8 - Review current field-control and eradication techniques for fruit flies (including area wide management, male annihilation technique, protein bait sprays and sterile insect technique).
Other strategies supported:	2.3, 2.4, 2.6, 9.3, 9.4, 10.1, 10.2, 10.3, 19
Tasks:	1. Drawing upon the FF Body of Knowledge work, undertake a study of current field control and pre-harvest practices and measures, capture existing management processes and data on their efficacy. 2. Commission research, as necessary, to develop data to support efficacy of management practices. 3. Development of a national fruit fly field control and pre harvest treatment efficacy

	standard. The development of the standards to be used to assess treatments and management tools/systems for their potential application in systems approaches (Project 10). 4. Support focused research on the development and improvement of Area Wide Management. 5. Undertake a review of national SIT practices in the context of wide area application of the technology to support management and eradication in pest free and endemic areas. 6. Develop appropriate measures for the effective management of abandoned orchards.

PROJECT 10 **DEVELOPMENT AND ADOPTION OF SYSTEMS APPROACHES FOR MARKET ACCESS.**

Support current activities focused on the application of Systems Approach for the management of fruit flies for market access. Building on this project, develop three specific models for fruit fly to test the ACERA framework. These will case study:

- citrus from Central Burnett (for the replacement of dimethoate and fenthion)
- tomatoes/capsicum from Bowen (for the replacement of dimethoate and fenthion)
- produce from South-east Australia (under temporary PFAs, ALPPs and possibly PFPPs - see Project 11)

Document within these models the expected efficacy of the system, realistic pathways to adoption and timeframes for acceptance by domestic markets. Using these models as the basis, hold a workshop to gain agreement on a standardised approach to the analysis, endorsement and application of systems approach for fruit fly.

Outcomes:	Implementation of systems approaches to meet phytosanitary market access requirements for domestic and export trade in fruit fly host commodities.
Benefits:	Development and adoption of systems approaches for the management of fruit flies will allow more effective access to a wider range of both domestic and international markets. • Improved market access. • Improvements to operational management practices.
Description:	With the potential change of use of chemical treatments such as dimethoate, fenthion and methyl bromide, effective systems approach based measures are required to ensure exporters continue to meet the phytosanitary requirements of domestic and international markets.
Current activities:	• ACERA project focused on establishing a framework for analysing the efficacy of system approaches. • Principles for development of systems approach agreed by the Primary Industries Standing Committee (September 2009). • ISPM No. 14 - The use of integrated measures in a systems approach for pest risk management
SC area and goal met:	2. Production, FF endemic areas. • *Nationally uniform standards for pre- and post- harvest fruit fly management measures for endemic areas, which are aligned with international standards.*
NFFS Priority strategies:	Strategy 9.6 **-** Develop systems approaches as alternatives to single step disinfestations treatments.
Other strategies supported:	2.3, 2.4, 2.6, 12.5, 19
Tasks:	1. Support the current activities focused on building a national model for the application of Systems Approach for the management of fruit flies. 2. Draw upon three case studies of systems approach for fruit fly management (citrus from Central Burnett, tomatoes/capsicum from Bowen and produce from South-east Australian PFAs, ALPPs and PFPPs; each based on ICA 28) to verify the systems approach model. 3. Hold a workshop to gain agreement on a standardised approach to the modelling, analysis, endorsement and application of systems approach for fruit fly. Document the agreed approach in a national standard for fruit fly system approaches. 4. Generate further systems utilising outputs from Project 9.

PROJECT 11 **NATIONAL APPROACH TO PFA, ALPP and PFPP FOR MARKET ACCESS**

Use international standards to enhance and document operational guidelines (National Standards) for establishing Pest Free Areas (PFAs), Areas of Low Pest Prevalence (ALPP), Pest Free Places of Production (PFPP) and Pest Free Production Sites (PS) for the management of fruit flies. This includes guidelines for:

- managing PFAs (including the practical standards and data fields needed to determine insect threshold criteria as per the International Standards for Phytosanitary Measures (ISPM) number 26 - *Establishment of pest free areas for fruit flies [Tephritidae]*)
- managing ALPPs (ISPM 30 - *Establishment of areas of low pest prevalence for fruit flies [Tephritidae]*).

Standards for managing PFPP/PS are under development as part of a draft ISPM on systems approaches for Tephritid fruit fly.

This project will finalise revised Codes of Practise (COP) for the establishment of area freedom for Med-fly and Q-fly, which include these elements of management.

The operational guidelines will be developed on a production region basis, promoting the application of consistent management measures within bio-geographical regions of equivalent risk profile, and meet relevant international standards. Their national endorsement will be secured.

Processes and timeframes will be developed to implement PFA, ALPP, and PFPP/PS status by domestic trading partners in the first instance and international markets in the longer term.

The systems that underpin export certification of fruit fly area freedom are necessarily complex and multi-jurisdictional. The integrity of the systems is critical to maintenance of ongoing trade and developing new markets. A national verification model for pest free areas for fruit fly will be developed that will include audit and verification arrangements for PFA, ALPP and PFPP/PS to assure the integrity of these areas for domestic and international phytosanitary certification.

Drawing on these National Standards for PFAs, ALPP, and PFPP/PS (and others i.e. systems approach and AWM) and the national verification model that assumes their integrity, develop and implement management strategies for specific regional areas, for example:

- the Riverina and other inland regions of NSW (e.g. Guyra, Jemalong, Orange, Young, Batlow)
- Northern Victoria
- Applethorpe and Stanthorpe, southern Queensland (avocadoes)
- Gascoyne irrigation area and Manjimup region (Western Australia)

These strategies will ensure an equitable sharing of responsibility for fruit fly management whilst providing producers with greater opportunity to access international fruit fly sensitive markets. They will define pest threshold criteria and suppression/control methods that will enable surrounding areas and areas of similar fruit fly profile to be maintained as an ALPP in order to buffer the PFA from fruit fly incursions. If this approach is successful, the strategy will be expanded to other areas in the tri-state region and Australia.

Outcomes:	A single set of nationally consistent standards for the operational management of fruit fly in PFA, ALPP, PFPP/PS, which are adopted by all governments and industries. Data sets created to populate standards and guidelines for the management of ALPPs and a nationally agreed systems approach for certification of fruit sourced from ALPPs. Creation of working PFA/ALPP models for concept testing whilst improving protection for fruit industries located within the NSW and Victoria.
Benefits:	The successful implementation of PFAs and ALPP will reduce the impact fruit flies have on yield, and, along with PFPP/PS, will improve market access to both domestic and international markets. • Improved market access. • Improvements to operational management practices. • Reduced production loses. • Improved emergency response arrangements.

Description:	PFA, ALPP, PFPP/PS are a validated and important management option used to maintain or reduce a pest population below a specified level in an area. They can be used to effectively support both the control of FF in endemic areas and help maintain area freedom.
Current activities:	• Central Burnett Area Wide Management program • ALPP submissions to US for market access (cherries from Young, citrus from Burke) • COP for Med-fly and QFF • Victorian technical review of fruit fly management • Current tri-state and PFA arrangements (Riverland and Sunraysia) • Preliminary project on ALPP standard though Australian Government fruit fly program. • USA standards on ALPP • AQIS/state collaboration to implement more robust verification procedures • Riverina Citrus PFA research, development and extension program. • ISPM No. 04 - Requirements for the establishment of Pest Free Areas • ISPM No. 10 - Requirements for the establishment of pest free places of production and pest free production sites • ISPM No. 22 - Requirements for the establishment of areas of low pest prevalence • ISPM No. 26 - Establishment of pest free areas for fruit flies (Tephritidae) • ISPM No. 29 - Recognition of pest free areas and areas of low pest prevalence • ISPM No. 30 - Establishment of areas of low pest prevalence for fruit flies (Tephritidae)
SC area and goal met:	2. Production, FF free areas and FF endemic areas. • *Internationally recognised area freedom across all production regions outside of endemic species natural distribution;* • *Nationally uniform standards for pre- and post- harvest fruit fly management measures for endemic areas, which are aligned with international standards.* 4. Market access and certification • *Regular audits and verification of systems to support the maintenance and gaining of market access.*
NFFS Priority strategies:	Strategy 1.4 - Finalise draft National COP for Med-fly and Q-fly, and develop a generic national COP for Fruit Flies. Supports 9.6, 9.8 and 9.1.
Other strategies supported:	2.3, 2.4, 2.6, 19
Tasks:	1. Establish appropriate operational guidelines and data fields for the use of PFAs, ALPPs, and PFPP/PS in the Australian context[5]. 2. Document these operational guidelines in relevant national standards and incorporate into Interstate Certification Arrangements as appropriate. 3. Drawing on these standards, develop and implement fruit fly management strategies for the Riverina and other inland regions of NSW, Northern Victoria, Applethorpe and Stanthorpe, Gascoyne irrigation area and the Manjimup region based on the application of contemporary approaches to market access underpinned by international standards and principles of shared roles and responsibilities. 4. If successful expand to other relevant areas in the tri-state and Australia. 5. Clarify and further document the existing PFA, ALPP and PFPP/PS verification arrangements, including roles and responsibilities for certification of systems for domestic and international trade 6. Establish a nationally agreed and endorsed verification model for phytosanitary certification for trade in both domestic and international markets.

[5] Specific COP already exist for the establishment of area freedom (PFAs) for Med-fly and Q-fly.

PROJECT 12 **HARMONISATION OF FRUIT FLY INTERSTATE CERTIFICATION ARRANGEMENTS**	
Harmonisation of all domestic fruit fly ICAs, taking into account international standards, national standards and pest risk analysis.	
Outcomes:	National trading protocols for fruit fly host product are consistent across Australia and with international standards.
Benefits:	Harmonisation of ICAs will reduce management costs for producers, exporters and regulators/govts whilst improving the access to both domestic and international markets. • Improved market access (through potential harmonisation of national and international market access requirements where conditions are similar, providing more options for growers and flexibility in market supply) • More efficient and coordinated fruit fly management structures.
Description:	It is recognised that variations in domestic trading regulations may result in added costs to industry, reduced competitiveness and potential confusion in market access / market maintenance negotiations. Lack of harmonisation of domestic interstate regulation reduces Australia's capacity to negotiate strong international market access arrangements.
Current activities:	• Project to assure the integrity of certification for fruit fly host product in domestic and international trade (Audit). • DQMAWG and mandate. • ICA review and development program under the Australian Government fruit fly program. • ISPM No. 24 - Guidelines for the determination and recognition of equivalence of phytosanitary measures
SC area and goal met:	4. Market access and certification, Domestic. • *An accepted single set of trading conditions for each economically-significant species of fruit fly;*
NFFS Priority strategies:	Strategy 1.5 - Consolidate and integrate national and international trading protocols and regulations (risk management and certification) Strategy 2.5 - Domestic regulations should be harmonized with and reflect internationally accepted standards.
Other strategies supported:	1.3, 2.1, 2.2, 2.4, 2.6, 12.1, 12.2, 12.7
Tasks:	1. Undertake a detailed study of the benefits and costs associated with harmonising ICAs. 2. Undertake a project to facilitate the development of priority Interstate Certification Arrangements. 3. Taking into account key issues and recommendations from the Audit, review regulations and ICAs with a focus on identifying a process to facilitate the harmonisation of Interstate Certification Arrangements[6]. 4. Develop a prioritised work plan under the leadership of DQMAWG to accelerate the harmonisation of ICAs and relevant regulations.

[6] This process is likely to require: a) National agreement on the underpinning science to support pest risk analysis to meet Australia's ALOP; b) application of consistent risk management measures; c) implementation of these measures through ICAs, international standards, and Codes of Practice; d) Appropriate regulation to deliver consistent outcome.

PROJECT 13 **PROVISION OF MARKET ACCESS INFORMATION**

Ensure both government and industry stakeholders can easily access all market access phytosanitary requirements for horticultural produce destined for both domestic and international markets. In order to support this information and increase awareness of market access processes, consolidate, document and present to all stakeholders:

- The steps and processes involved in gaining and maintaining market access;
- The roles and responsibilities of the key stakeholders in gaining and maintaining market access;
- The risk analysis process.

Outcomes:	A central source of information that will provide easy access to phytosanitary trade requirements for market access and trade.
Benefits:	Greater access to relevant market access information will assist producers and exporters in meeting the appropriate export requirements, improving both their ability to access markets and prevent costly penalties or barriers. • Improved market access • More efficient and coordinated fruit fly management structures.
Description:	A centralised, comprehensive information tool is required to provide the necessary market access information, in a timely manner, which will allow governments and industry to easily find phytosanitary trade requirements.
Current activities:	• DQMAWG website • AQIS Phyto database • ISPM No. 01 - Phytosanitary principles for the protection of plants and the application of phytosanitary measures in international trade.
SC area and goal met:	4. Market access and certification, International. • *Market access activities are developed and undertaken by government and industry in partnership, with clear roles and responsibilities identified.* • *Regular audits and verification of systems to support the maintenance and gaining of market access;*
NFFS Priority strategies:	Strategy 1.2 - Develop and maintain an international market access information package to ensure dissemination of information to relevant stakeholders to assist market access planning. Strategy 3.2 - Increase communication of the international and national market access processes, including formalisation of roles and responsibilities of the various stakeholders.
Other strategies supported:	1.1, 1.3, 12.6, 12.8
Tasks:	1. Improve access to regulatory information through initiatives, such as the DQMAWG website, and application of tools (such as ABIN) to improve the availability of and access to market access information (e.g. certification requirements). 2. Enhance the PHYTO database and its applications as a repository for international market access regulatory requirements. 3. Develop an awareness package on market access processes. Hold a workshop on market access for all relevant stakeholders.

PROJECT 14 **FRUIT FLY RESEARCH AND DEVELOPMENT PRIORITIES**

On a regular basis, generate a fruit fly research priority guide, using information gathered from:

- A review of market access requirements (Project 13);
- A gap analysis of the production supply chain;
- Outputs from each of the projects identified in this plan.

Integrate this prioritisation process with the proposed PISC R&D agenda and use it to inform priorities of research providers including Horticulture Australia Ltd.

Outcomes:	A regularly updated, nationally focused set of research priorities for fruit flies that takes into account the full spectrum of current knowledge and future management requirements.
Benefits:	A set of clear research priorities will assist R&D funders to target research dollars to where it is most needed, improving innovation and advancement of the system overall. • More efficient and coordinated fruit fly management structures.
Description:	Prioritisation of fruit fly research and development activities is necessary to maximise the rate of return on investment from research and development funding. It is important an overarching focus be taken when setting research agendas to aid collaboration and knowledge transfer, and reduce duplication of research.
Current activities:	• R&D funding organisations (including HAL 5 year R&D strategic plan for market access) • PISC R&D funding structure
SC area and goal met:	All – Research and development.
NFFS Priority strategies:	Strategy 9.2 - Undertake research to increase the understanding of the physiological, behavioural and ecological processes specific to fruit fly species. Strategy 13.1 - Establish a research and development funding process that supports both short–term and long-term strategic goals. Strategy 13.2 - Establish a mechanism to maintain and increase the current level of scientific and technical skills, expertise and knowledge available for fruit fly research and development. Strategy 14.3 - Establish a mechanism to ensure that the research and development prioritisation process is open, consultative, transparent and includes independent expert scientific advice.
Other strategies supported:	14.1, 14.2, 14.4, 15.1
Tasks:	1. Develop a regularly updated, nationally focused set of short, medium and long term research priorities for fruit flies for use by stakeholders, funding agencies and the wider research community. Input provided by groups/organisations including, but not necessarily limited to, the Domestic Quarantine and Market Access Working Group (DQMAWG), the Subcommittee on Plant Health Diagnostic Standards (SPHDS), the Surveillance Reference Group (SRG), Horticulture Australia Limited (HAL) and its Working Group on Market Access Research and Development (WGMARD), the Plant Health Committee (PHC) and Plant Health Australia (PHA) and its members.

PROJECT 15	**COORDINATED NATIONAL FRUIT FLY AWARENESS/COMMUNICATIONS**
Coordinate current efforts around Australia to raise awareness of the impacts of fruit flies and encourage attitudinal and behavioural change with respect to fruit fly management. This will include the development of a national communication strategy that will analyse current awareness activities, identify possible synergies between agencies' and propose communication messages delivered in collaboration by a central coordinating agency.	
Outcomes:	Improved awareness and understanding of the threat posed by economic fruit fly species, improved backyard management of host plants to better manage fruit fly populations and improved compliance with regulatory measures.
Benefits	Consistency and reduced duplication of communications on fruit fly management and regulations will improve management outcomes. • More efficient and coordinated fruit fly management structures.
Description:	Insufficient awareness among agencies and organisations of each others' activities can result in missed opportunities to maximise the impact of fruit fly messages. An analysis of current awareness activities will identify possible synergies between agencies' strategies and possible economies of effort under a central coordinating agency. Sharing of this knowledge, and the experience lying within the agencies, will optimise the use of new and existing communications techniques in delivering clear messages to the primary target audiences i.e. the travelling public, home gardeners and itinerant workers (all including people from non-English speaking backgrounds). Techniques or products could still be modified to suit particular situations if necessary.
Current activities:	• PHA, DAFF, DQMAWG and State governments all, to a greater or lesser extent, undertake communication/awareness programs in relation to relevant fruit fly species. • Home garden fruit fly information website and portal (under development) through the Australian Government fruit fly program. • Tri-state committee's activities raising awareness of the threat of fruit flies to regional horticultural industries and the regulatory programs in place, and developing community partnerships with industry to mitigate fruit fly threats.
SC area and goal met:	All
NFFS Priority strategies:	Strategy 3.1 - Improve the national coordination of the management of fruit fly so to involve all stakeholders and facilitate strategic control within and across jurisdictions Strategy 3.2 - Increase communication of the international and national market access processes, including formalisation of roles and responsibilities of the various stakeholders.
Other strategies supported:	1.3, 3.3, 4.3, 4.4, 4.5, 6.1, 6.2, 6.3, 8.4, 11.1, 11.2, 12.4, 12.8, 16.1, 16.2, 17.1, 17.2
Tasks and costs:	1. Development of a national fruit fly communication strategy identifying priorities and target audiences. 2. Delivery of a co-ordinated national communications program.

7. GOVERNANCE AND MANAGEMENT FRAMEWORK

NATIONAL COORDINATION

At the meeting of the National Fruit Fly Strategy Implementation Committee in May 2009 it was agreed that an ongoing management structure was needed to facilitate the implementation of the Action Plan. The Implementation Committee proposed that Plant Health Australia would be an appropriate organisation to support the ongoing national management of fruit flies by providing a national governance program.

ROLE AND RESPONSIBILITY

The aim of a 'National Fruit Fly Governance Body' (NFFGB) will be to maintain oversight of the strategy and its goals of improving national management of fruit flies in Australia, particularly through the implementation of the projects outlined in this Action Plan. The governance body will be responsible for driving and measuring progress of implementation, continuing to analyse the FF management system, and proposing relevant measures to address any areas of concern.

It will also be responsible for the oversight of fruit fly information (in partnership for example with ABIN) and the prioritisation of fruit fly research and development in support of the research and development corporations.

PLANT HEALTH AUSTRALIA

Plant Health Australia (PHA) is the lead national coordinating body for plant biosecurity in Australia. As an impartial, non-profit company, PHA works in partnership with industry, governments, researchers and others to facilitate and manage improvements in biosecurity policy and practice across Australia's plant industries, and to build capacity to respond to plant pest emergencies.

Through company activities, PHA's efforts enhance Australia's plant health status, support trade and safeguard the sustainability and profitability of plant industries.

PHA's Mission is to:

- provide strategic leadership and development of a genuine industry and government partnership for national plant health policies and programs
- commission, coordinate, and manage agreed plant health programs
- complement the work of industry, government, research and other relevant organisations by contributing to, and improving the biosecurity system
- bring ideas and priorities to the fore and provide effective leadership on the plant health incursion management framework
- maintain and improve international and domestic confidence in Australia's plant health status
- contribute to the sustainability of Australia's plant industries and the environment

- deliver effective consultative, transparent and auditable systems for the management of the Company.

GOVERNANCE BODY AIMS

PHA will establish a program (within the company) to maintain full time oversight of the national management of fruit flies. The program will be accountable to PHA members and Board, and report twice a year to members.

The NFFGB will liaise with groups with relevant responsibilities (Figure 3) and drive the delivery of the Action Plan projects that progress the goals of the NFFS.

To achieve this, the governance body will:

- Oversee and coordinate implementation of the Action Plan and secure optimum gains for an initial three year period through a work plan agreed by PHA members.
- Measure progress of implementation and continue to monitor and review the wider fruit fly management system.
- Secure commitment from parties to support the implementation of the Action Plan.
- Develop a longer term program based on progress in the first two years that will continue to implement all recommendations of the NFFS.
- Commission a review of the NFFS as appropriate.

GOVERNANCE BODY OUTCOMES

The outcomes of this initiative will provide:

- The ongoing delivery of the National Fruit Fly Strategy to achieve its goals
- A national overview of fruit fly surveillance activities.
- A national oversight of the management of fruit flies that will facilitate enhanced national strategic and prophylactic responses to fruit fly incursions and support market access and trade.

Outputs will include:

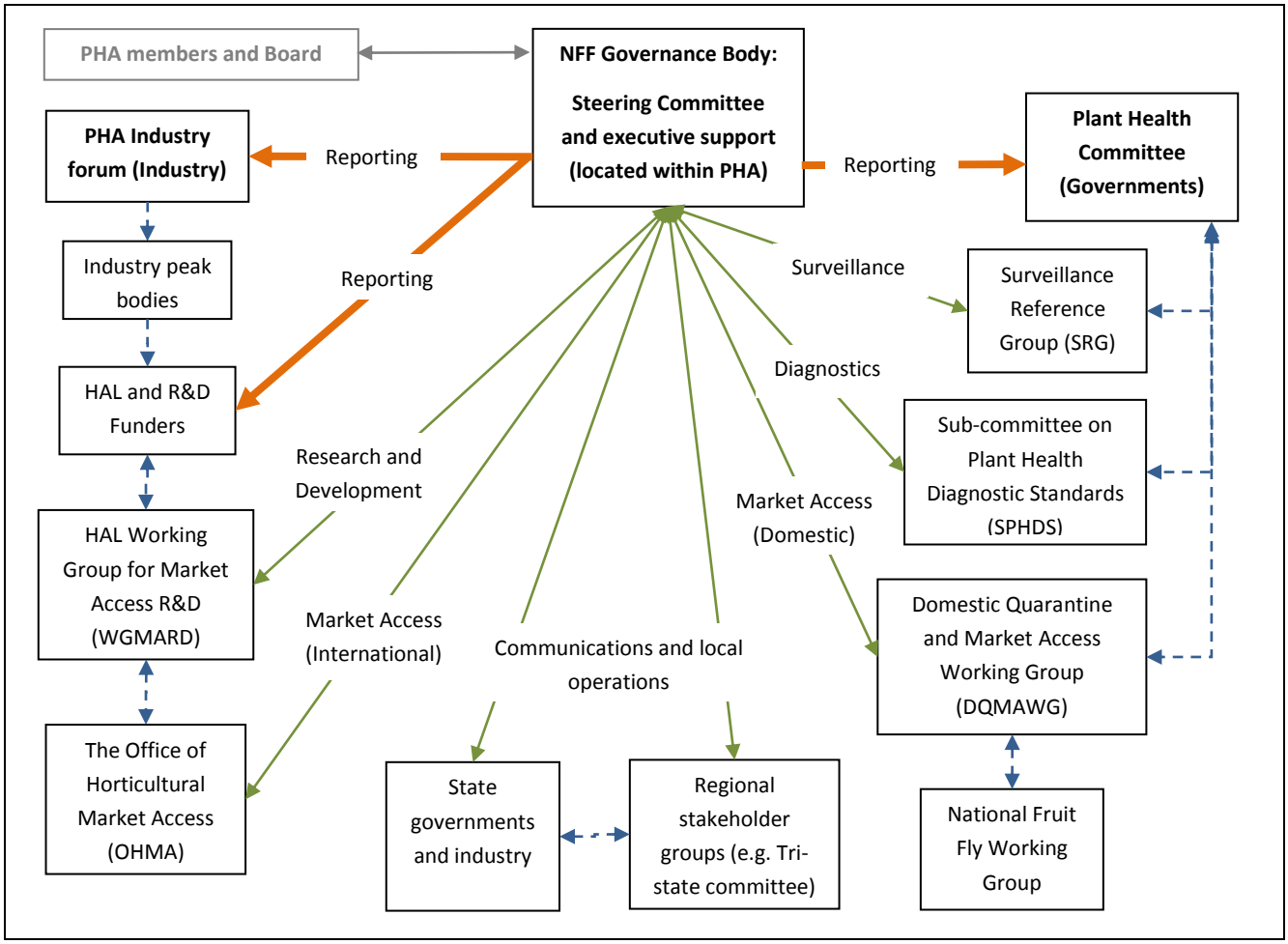
- Delivery of the annual work plan
- Progress report to stakeholders twice a year
- Identification of new and emerging threats to the work plan and NFFS outcomes
- Risk mitigation options to manage these threats.

STRUCTURE AND FUNDING

It is proposed that the NFFGB is managed as a program within PHA, and is modelled on a similar structure adopted by Animal Health Australia for the National Johne's Disease Control Program (NJDCP). The principle goal of the NJDCP is to provide effective coordination of Johne's disease programs. These apply across all jurisdictions and affected industries, to protect the favourable Johne's disease status of the country and reduce the impact of the disease and control measures on

the industries. In particular, activities within the program are aimed at protecting the economic and trade interests of the various livestock industries.

FIGURE 3. PROPOSED OPERATING AND REPORTING LINAKAGES BETWEEN THE NFFGB AND RELEVANT BODIES



It is proposed that a multi stakeholder steering committee is formed to support the NFFGB comprising representation from fruit fly affected industries, government stakeholders and R&D funding providers, similar to that used to support the AHA National Johne's Disease Control Program (NJDCP) and consistent with the scope of membership on the NFFS IC. The skills based steering committee members will be formed from individuals with specific skills and knowledge in the operational management of fruit flies from both industry and government.

The steering committee will draw advice as required from technical experts, researchers, policy and operational directly involved in the day-to-day management of Fruit flies.

It will have close reporting and collaboration ties with the range of groups and organisations currently involved in the management of Fruit flies in Australia. These linkages are highlighted in Figure 3.

It is proposed that the steering committee will determine reporting milestones, meet annually to ensure milestones are met and provide guidance with regard to the ongoing management of the program by Plant Health Australia. It will be supported by a small, appropriately skilled team provided by Plant Health Australia.

BUDGET

The NFFGB will be a program within PHA with funds specifically collected to support the initiative. The budget will provide the costs directly attributable to the NFFGB for the national management and coordination of the program.

8. CONCLUSION

It is recognised that Australian horticulture, worth $4.8 billion annually, is highly dependent on Australia's capacity at farm, regional and national levels to manage endemic and exotic fruit fly species.

In December 2008, the Australian Government released the draft national Fruit Fly Strategy, a document representing the collective view of a large number of industry and government stakeholders, that set out a vision of a future where fruit flies are no longer a constraint to sustainable production or a significant barrier to national and international market access.

The National Fruit Fly Strategy Implementation Committee convened over a period of nine months to examine the strategies and initiatives contained within the NFFS, and developed a coordinated Action Plan for the implementation of the NFFS.

At its heart, the Action Plan recognises that that management of fruit flies in Australia requires an integrated national approach that defines clear roles and responsibilities for industry, government and community stakeholders. The plan also recognises that in the current economic climate significant "new" investment (from industry and government stakeholders) for fruit fly management may be limited and that future national management must be both effective and sustainable.

The Action Plan presents details on two primary components:

a) Fifteen projects aimed at implementing the priority recommendations in the NFFS.
b) The establishment within Plant Health Australia of a National Fruit Fly Governance Body (NFFGB).

The purpose of NFFGB is to:

- Oversee and coordinate implementation of the Action Plan and secure optimum gains for an initial three year period through a work plan agreed by PHA members.
- Measure progress of implementation and continue to monitor and review the wider fruit fly management system.
- Secure commitment from parties to support the implementation of the Action Plan.
- Develop a longer term program based on progress in the first two years that will continue to implement all recommendations of the NFFS.
- Commission a review of the NFFS in year five.

The formation of the NFFGB will enable strategy implementation and ensure that benefits for all stakeholders are realised.

The implementation of the NFFS does not focus significantly on how states and industry operate on a day to day basis, but establishes processes and information that strongly supports and informs operational activities.

The implementation of the priority strategies derived from the draft National Fruit Fly Strategy allows a national coordinated program for the management of fruit flies to be realised. Outcomes attributable to the implementation of the strategy will be visible in changes to the current commodity supply chains and should be quantifiable in market gains and grower returns from more effective fruit fly management systems.

To compliment the draft Action Plan, the NFFS Implementation Committee proposes to commission further economic analysis of the specific projects. This will outline general benefits to growers, government agencies and the wider community and form the basis of an investment plan that will match actions with costs and benefits.

The Action Plan represents the culmination of some three years work by industry, government and community stakeholders. It presents a unique opportunity for Australia to have a viable, cost effective and sustainable approach to fruit fly management at the forefront of international biosecurity. It sets out the blueprint for a successful industry, government and community partnership for the effective delivery of a national pest management programme in the interests of all stakeholders.

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GLOSSARY

Term	Definition
Pest Free Areas (PFAs)	An area in which a specific pest does not occur as demonstrated by scientific evidence and in which, where appropriate, this condition is being officially maintained (IPPC - ISPM No. 5)
Pest Free Production Sites (PS)	A defined portion of a place of production in which a specific pest does not occur as demonstrated by scientific evidence and in which, where appropriate, this condition is being officially maintained for a defined period and that is managed as a separate unit in the same way as a pest free place of production (IPPC - ISPM No. 5)
Pest Free Place of Production (PFPP)	Place of production in which a specific pest does not occur as demonstrated by scientific evidence and in which, where appropriate, this condition is being officially maintained for a defined period (IPPC - ISPM No. 5)
Areas of Low Pest Prevalence (ALPP)	An area, whether all of a country, part of a country, or all or parts of several countries, as identified by the competent authorities, in which a specific pest occurs at low levels and which is subject to effective surveillance, control or eradication measures (IPPC - ISPM No. 5)
Endemic	Endemic fruit flies are those considered established in Australia
Exotic	Exotic fruit flies are those not currently established in Australia
Systems Approach	The integration of different risk management measures, at least two of which act independently, and which cumulatively achieve the appropriate level of protection against regulated pests (IPPC - ISPM No. 5)

For further definitions, refer to ISPM No. 05 (2009) Glossary of phytosanitary terms.

APPENDIX 1

List of Fruit fly Affected Commodities.

This list reflects commodities commonly at risk in an Australia context and is not representative of all hosts of fruit flies.

Abiu (*Pouteria caimito*)	Lime (*Citrus latifolia*) - Tahitian Lime
Acerola (*Malpighia glabra*)	Lime (*Citrus reticulata* var*. austera*) - Rangpur lime
Apple (*Malus domestica*)	Loganberry (*Rubus loganobaccus*)
Apricot (*Prunus armeniaca*)	Longan (*Euphoria longan*)
Avocado (*Persea americana*)	Loofah, Smooth (*Luffa cylindrica*)
Babaco (*Carica pentagona*)	Loquat (*Eriobotrya japonica*)
Banana (*Musa acuminata*)	Lychee (*Litchii chinensis*)
Blackberry (*Rubus fruiticosus*)	Mandarin (*Citrus reticulata*)
Black Sapote (*Diospyros Ebenum*)	Mango (*Mangifera indica*)
Blueberry (*Vaccinium corymbosum*)	Mangosteen (*Garcinia mangostana*)
Brazil Cherry - see Grumichama	Mulberry (*Morus nigra*)
Breadfruit (*Artocarpus altilis*)	Nashi (*Pyrus pyrifolia* var*. culta*)
Caimito (*Chrysophyllum cainito*)	Nectarine (*Prunus persicae* var*. nectarina*)
Cape Gooseberry (*Physalis peruviana*)	Olives (*Olea europaea*)
Capsicum (*Capsicum annuum* var. *grossum*)	Orange (*Citrus aurantium*) (*Citrus sinensis*)
Carambola (*Averrhoa carambola*)	Passionfruit (*Passiflora* spp.)
Cashew Apple (*Anacardium occidentale*)	Papaw (*Carica papaya*)
Casimiroa (*Casimiroa edulis*)	Peach (*Prunus persica*)
Cherimoya (*Annona cherimolia*)	Peacharine (*Prunus nucipersica*)
Cherry (*Prunus avium*)	Pear (*Pyrus communis*)
Chilli (*Capsicum annuum* var. *acuminatum*)	Pepino (*Solanum muricatum*)
Choko (*Sechium edule* Jacq. Sw.)	Persimmon (*Diospyros kaki*)
Citron (*Citrus medica*)	Plum (*Prunus domestica*)
Coffee berry (*Coffea* species)	Plumcot (*Prunus domestica x Prunus armeniaca*)
Custard Apple (*Annona squamosa*)	Pomegranate (*Punica granatum*)
Date (fresh) (*Phoenix dactylifera*)	Prickly Pear (*Opuntia stricta* or *O. ficus indica*)
Dragon Fruit (*Hyloscereus undatus*)	Pummelo (*Citrus grandis*)
Durian (*Durio zibethinus*)	Quince (*Cydonia oblonga*)
Eggplant (*Solanum melongena*)	Rambutan (*Nephelium lappaceum*)
Feijoa (*Feijoa sellowiana*)	Raspberry (*Rubus idaeus*)
Fig (*Ficus carica*)	Rollinia (*Rollinia deliciosa*)
Granadilla (*Passiflora quadrangularis*)	Rose Apple (*Syzygium jambos*)
Grapefruit (*Citrus paradisi*)	Santol (*Sandoricum indicum*)
Grapes (*Vitis species*)	Sapodilla (*Manilkara zapota*)
Grumichama (*Eugenia braziliensis*)	Sapote
Guava (*Psidium species*)	Soursop (*Annona muricata*)
Jaboticaba (*Myrciaria cauliflora*)	Strawberry (*Fragaria ananassa*)
Jackfruit (*Artocarpus heterophyllus*)	Sweetsop (*Annona squamosa*)
Jambu (*Syzygium cumini*)	Tamarillo (*Cyphomandra betacea*)

Kiwifruit (*Actinidia deliciosa*) Kumquat (*Fortunella japonica*) Lemon (*Citrus meyeri; also Citrus limon x citrus chinese*) Lime (*Citrus aurantiifolia*) - West Indian Lime	Tangelo (*Citrus reticulata x C. paradisi*) Tomato (*Lycopersicon esculentum*) Wax jambu (*Eugenia jambos*)

APPENDIX 2

Executive Summary of the Draft National Fruit Fly Strategy

NB: The summary has been modified slightly for inclusion in this plan.

The National Fruit Fly Strategy (NFFS) is a national initiative aimed at improving Australia's management of fruit fly, the world's most economically significant horticultural pest. Sustainable management of fruit fly is of central concern to Australia's $6.9 billion horticultural industries, which capitalise on both domestic and international trade.

The NFFS aims to develop a viable, cost-effective and sustainable national approach to fruit fly management, with commitment from all stakeholders. The strategy applies to all endemic1 and non endemic species of fruit fly across the contemporary biosecurity2 continuum, from pre-border to farm level.

THE STRATEGIC FRAMEWORK

An initial task in the development of the NFFS was to define the vision, goal, outcomes and objectives. This foundation provided direction and focus, enabling the development of 20 recommendations, which are summarised below.

VISION

That fruit flies are no longer a constraint to sustainable production or a significant barrier to national and international market access.

GOAL

Australia will have a viable, cost-effective and sustainable national approach to fruit fly management that will place us in the forefront of international biosecurity, with all stakeholders committed to the national policy that underpins this approach.

OUTCOME

Effective, efficient and sustainable pest management, achieved through innovative technical and systems capability that maintains and enhances market access to meet current and future needs.

OBJECTIVES

- To reduce the risk of fruit fly incursions from overseas and the spread of economically significant species within Australia as far as practicable.

- To optimise early detection and response to non-endemic and economically significant endemic fruit flies to minimise their impact.
- To manage fruit fly through effective and efficient use of tools, technology and people in order to establish, maintain or modify the fruit fly status of an area to support trade and sustainable production.
- To raise awareness of biosecurity generally and fruit fly specifically to empower growers, industry, government and community to work collaboratively to minimise the impacts of fruit fly on production, environment and trade.
- To establish and maintain an intelligence network that imparts information to target risks and threats, supports the risk assessment process and facilitates development and ongoing implementation of the fruit fly management system.

CRITICAL SUCCESS FACTORS

Critical success factors provide a benchmark by which the quality, success and the benefits of the NFFS can be measured and kept on track throughout implementation. The success of the NFFS depends on the following factors:

- a nationally coordinated approach to fruit fly management
- a nationally collaborative approach to fruit fly management
- a consistently applied evidence-based system for the management of fruit fly
- harmonisation of the regulations, processes and procedures that are implemented to support the strategies with:
    - international standards set by the International Plant Protection Convention (IPPC)
    - the World Trade Organisation (WTO) agreements
- compliance with national standards, including auditing and reporting
- adequate investment in the implementation of the NFFS
- application of a set of economic principles.

DEVELOPMENT AND CONSULTATION

The NFFS has been developed through a collaborative effort by Australia's horticultural industries, the Australian Government, state and territory governments, and various research institutions facilitated and supported by Plant Health Australia (PHA).

The NFFS Steering Committee, chaired by Professor Mal Nairn, led the development of the strategy. Four subgroups (Market Access and Biosecurity, Operations, Legislation and Regulation, and Research and Development) were tasked with developing key strategies and approaches in their respective areas, to underpin the key directions and recommendations. In addition, a private consultancy undertook a cost–benefit study on the economic feasibility of the NFFS.

A broad cross-section of public and private stakeholders were invited to participate in actively shaping the NFFS through three open forums held over 15 months. Each forum presented the outcomes achieved to that point, with a focus on discussion and engagement. More than 60

organisations were invited to participate in this process, and the high turnout resulted in a strong partnership between all stakeholders in achieving a national solution.

THE SUBGROUPS

MARKET ACCESS AND BIOSECURITY

The Market Access and Biosecurity Subgroup considered issues surrounding new, improved or restored entry for horticultural commodities into markets where terms and conditions of access need to be negotiated on an inter-governmental basis. The subgroup examined current policy focused on keeping exotic fruit flies out of Australia, encompassing components such as risk analysis, surveillance, incursion preparedness and emergency response.

OPERATIONS

Operations encapsulates the activities that deliver the elements of fruit fly management systems, enabling outcomes in prevention, detection, eradication, management, diagnostics and communication and awareness. These activities occur at all levels of the contemporary quarantine continuum including overseas (pre-border), at the entry points to Australia (border) and in areas throughout Australia (post-border). In Australia, these activities are undertaken throughout environments and within communities; they involve governments, industries (both large and small), individual farms and the wider public.

LEGISLATION AND REGULATIONS

The scope of the Legislation and Regulations Subgroup was the legal and regulatory frameworks at the national and state/territory levels that provide the mechanisms by which consistent fruit fly management programs are delivered. If the strategic goals for accessing and maintaining international markets are to be achieved, the regulation and legislative controls for the management of pests must be harmonised internally across Australia and externally with international standards.

RESEARCH AND DEVELOPMENT

Research and development activities underpin all elements of fruit fly management, providing technically justifiable approaches and innovative solutions to meet the requirements of market access and biosecurity, operations, and legislation and regulation. The identification and prioritisation of current and future research and development is essential to maintaining horticultural production and market access advantages in Australia.

THE NATIONAL BENEFITS

The benefits of a NFFS apply to a broad range of jurisdictions and organisations. For the three key stakeholder groups these include:

The Australian Government	State and territory governments	Australian horticultural industries and growers
• Reduced management costs • Improved value of non-commercial amenities • Reduced impact on the environment • Improved regional economies • Food security.	• Improved state quarantine • Unified interstate trade regulations.	• New or improved market access • Increased interstate trade • Increased international trade • Improved and streamlined regulations • Improved crop yield and quality • Improved on-farm profitability • Reduced risk of non-endemic fruit flies.

To ensure this positive national return, a set of economic principles were devised to guide the implementation of the NFFS; they are – contestability, division of labour, transparency, performance reviews and market access. These principles were applied by the subgroups as a test of reasonableness, to ensure that their proposed strategies would be cost effective, commercially relevant and meet WTO requirements for market access.

The establishment of an NFFS Implementation Committee will be necessary to oversee the implementation of the NFFS. This committee will be responsible for overseeing a detailed benefit-cost and beneficiaries analysis to establish the distribution of costs across key stakeholders. The Implementation Committee will also develop a 3 year action plan to prioritise and budget the recommendations of the NFFS.

RECOMMENDATIONS

The four subgroups developed 20 recommendations targeting major areas; these are listed below. The full document also includes a set of strategies underpinning each recommendation. These strategies cover critical issues and priorities identified within each area, and provide further direction for implementation.

RECOMMENDATION 1

Enhance the national ability to gain, maintain and/or regain market access through:

- targeted research and development to underpin market access applications
- development of international and national market access information packages (trade statistics and phytosanitary treatments) to drive planning, prioritisation and resourcing
- development of a generic national code of practice
- national harmonisation of management approaches and trade regulations.

RECOMMENDATION 2

Adopt the seven legislation and regulation principles (see Chapter 3 for the full list) as a national framework to review and harmonise regulatory approaches, to maximise the efficiency, effectiveness and competitiveness of Australian horticultural production.

RECOMMENDATION 3

Initiate a national approach to communications using a continuum of messages to establish and maintain awareness of fruit fly related issues with all stakeholders and within the broader community, thus encouraging all parties to work collaboratively.

RECOMMENDATION 4

Support the functionality of the Emergency Plant Pest Response Deed (EPPRD) through a high level of commitment by government and industry parties to meet obligations under the EPPRD, to reduce biosecurity risk and to maintain an appropriate level of capacity and capability.

RECOMMENDATION 5

Actively adopt the national industry biosecurity planning process as the primary vehicle to focus on high-priority fruit flies, and as a planning tool to assist in the implementation of biosecurity strategies, including contingencies for use in the event of an incursion.

RECOMMENDATION 6

Engage regions and communities to ensure a more systematic development of fruit fly management activities.

RECOMMENDATION 7

Develop and implement nationally agreed and consistent fruit fly surveillance systems to enhance the capacity and capability of existing and new programs.

RECOMMENDATION 8

Facilitate a nationally integrated approach to diagnostic capacity and capability for fruit flies, in alignment with international standards, to improve efficiency and reduce associated costs.

RECOMMENDATION 9

Bring together the management tools for fruit fly into a reference kit to facilitate dissemination of information and identification of deficiencies in, or opportunities to enhance, fruit fly management practices.

RECOMMENDATION 10

Develop a national position in relation to the application of sterile insect technique against economically important fruit fly species, including the feasibility of a multipurpose insect rearing facility.

RECOMMENDATION 11

Actively collect, analyse and communicate relevant information to create an environment of learning and understanding to realise opportunities for advancement and continuous improvement of the fruit fly management system.

RECOMMENDATION 12

Harmonise regulations, processes and procedures based on the agreed risk-based standards, underpinned by robust science and consistent with the principles of the NFFS.

RECOMMENDATION 13

Maintain and enhance fruit fly research capability, capacity and resources.

RECOMMENDATION 14

Develop a process for ongoing prioritisation of fruit fly research and development activities to provide clear direction for current scientific activities and proactively identify emerging research needs consistent with the directions of this strategy.

RECOMMENDATION 15

Develop and strengthen fruit fly research and development collaborations and linkages, nationally and internationally, and ensure these cover the different sectors involved in fruit fly management.

RECOMMENDATION 16

Develop information storage and retrieval systems to support and enhance fruit fly research and development.

RECOMMENDATION 17

Develop systems for efficient and effective uptake of fruit fly research and development outcomes.

RECOMMENDATION 18

Assess the feasibility, practicality and cost effectiveness of eradicating Mediterranean fruit fly from Australia, building on the outcomes from the cost–benefit analysis undertaken in 2001. The assessment should include all benefits, not just cost effectiveness, including those to the community from growing their own non-infested fruit.

RECOMMENDATION 19

Undertake an optimum scenario assessment of all the tools available (including sterile insect technique) for the future management of Queensland fruit fly to reduce the impact in endemic areas and to minimise the imminent threat of the introduction and spread from the existing populations to other parts of Australia with area freedom status.

RECOMMENDATION 20

Amend the current institutional arrangements to enable the implementation of the NFFS in compliance with the economic principle 'division of labour', and establish a committee to implement the NFFS with secretariat support from Plant Health Australia.