



Department
for Environment
Food & Rural Affairs

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Protecting Plant Health

A Plant Biosecurity Strategy for Great Britain

April 2014



Llywodraeth Cymru
Welsh Government



Forestry Commission



The Scottish
Government



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Foreword

Our plants are under greater threat than ever before. There has been a long-term trend of increasing volume and speed of movement of plants and other material traded from an increasing variety of sources. This increases the chances of exotic pests arriving with imported goods and travellers, as well as by natural means. Other stresses including those caused by climate and changes in land use may increase the risk of pest establishment, spreading and having an impact. The Plant Health Services have been working to tackle these threats for many years but the discovery of *Chalara fraxinea* (ash dieback) in England in 2012 raised awareness among the general public as well as within Government of plant health and risks posed to our plants from new pests and diseases.

This strategy, which has been developed in partnership with key stakeholders, sets out plans to provide robust protection for crops, trees and other plants building upon and enhancing the work already undertaken by the Plant Health Services across Great Britain. It provides a broad overview of the work we will be undertaking at home, within the EU and internationally, and is flexible to ensure our systems are dynamic, and constantly evolving to keep pace with changing threats.

We have agreed this strategy on a GB basis because pests and diseases do not recognise national boundaries and it is therefore important that any responses must be co-ordinated where appropriate. We will also continue to work closely with Northern Ireland to ensure the best possible protection to the UK as a whole, while recognising the importance of close collaboration with the Republic of Ireland to strengthen biosecurity for the whole island of Ireland.

This strategy sets out how we will ensure everyone with a role to play in plant health is aware of the risks and is acting on their responsibilities to minimise those risks. This is because government alone cannot tackle threats to plant health. The strategy therefore has a focus on working with others, building upon and strengthening partnerships with a wide range of groups including: government, the international community, industry, Non-Government Organisations (NGOs) landowners and the public so we can all contribute to protecting the health of our plants.

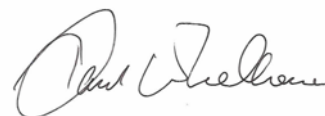
This strategy is the result of extensive discussion and input from a wide spectrum of interested parties, all of whom willingly contributed their expertise and time. We would like to record our appreciation to all the people who have contributed including, amongst others, government agencies, representatives of industry, farming, forestry, the independent Taskforce on Tree Health and Plant Biosecurity, and conservation organisations.



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Introduction

Plants are an essential economic, environmental and social asset: cereals, fruit and vegetables make a vital contribution to our food supply and to our rural economy and other plant species are essential parts of the biodiversity of the countryside. They also provide important ecosystem services; for example, trees shape the landscape and provide timber. They are equally important in urban areas (including streets, squares, parks and public and private gardens), and are part of our heritage, provide visual amenity and support our health and wellbeing¹.

The threats to plant biosecurity have increased with the globalisation in trade and travel which has resulted in increased volume and diversity of plants and plant products entering the UK² and other Member States of the European Union. Predicted climate change effects, such as warmer winters and changes in seasonal rainfall and storm patterns, may also increase the risk of pest establishment, spread and impact, and may influence the conditions under which previously benign pests are able to develop and cause damaging impacts. Combinations of pests and diseases, and other stressors, such as air pollution and acid rain, add to the complexity of the picture.

Safeguarding plant health is one of Defra's four priorities, as well as featuring prominently in the priorities of the Scottish and Welsh Governments. The Plant Health Services act to safeguard the biosecurity of plants whilst facilitating sustainable economic growth. They take a risk-based approach to ensure that effort is based on an assessment of the overall costs and benefits to society. This ensures that intervention to protect plants from new pests and diseases are proportionate and targeted to make best use of the resources available. In strengthening our approach and activity through this strategy we will build upon and enhance this risk-based approach to ensure the best available protection.

¹ Office of National Statistics (measures for wellbeing): http://www.ons.gov.uk/ons/dcp171766_272242.pdf

² Brasier, C.M. (2008). The biosecurity threat to the UK and global environment from international trade in plants. *Plant Pathology* 57 (5), 792-808

Plant Health Services

The UK Plant Health Services comprise Defra (supported by Fera), together with the Forestry Commission (FC) and the devolved administrations in Scotland, Wales and Northern Ireland. The services work with international bodies, other European and EU Member States and the European Commission to agree appropriate plant health rules and co-ordinate their implementation.

Plant health and forestry are devolved matters. The responsibilities of public agencies for plant health are set out in the Plant Health Act 1967. This splits responsibility between the Forestry Commission, with responsibility for protection of forest trees and timber products in England and Scotland (Welsh Ministers became the competent authority for tree health in Wales on the 1st April 2013), and Defra and the devolved administrations, having responsibility for other aspects of plant health.

Fera's Plant Health and Seeds Inspectorate (PHSI) are responsible for implementing the plant health regulations in England and Wales, on behalf of Defra and the Welsh government. The Scottish Government is responsible for implementation in Scotland.

This strategy has been developed on a GB basis, building on extensive cooperation between the three administrations. Plant health policy is devolved but all the UK administrations work within the framework of EU plant health law and work collaboratively to build consistent approaches to the implementation of biosecurity. This strategy does not prevent national authorities taking a different approach to a specific pest where there is a differing position or mitigating circumstances but through strengthened governance it will ensure that there is coordinated and complementary action to equip us to meet future challenges.

The GB governments (references to government cover all of the GB governments in this document for ease of reference) also work closely with the Northern Ireland government and will continue to do so. Reflecting their need to ensure collaboration across their common border, Northern Ireland also work closely with the Republic of Ireland, and they are developing a strategy on that basis. As part of the implementation of the strategy all the national authorities will collectively review governance arrangements to clarify responsibilities, strengthen accountability and address any gaps or uncertainties.

In 2013 the independent Taskforce on Tree Health and Plant Biosecurity assessed the threat to the health of our plants from pests, pathogens and syndromes (such organisms affecting plants are referred to in the remainder of this document as “pests” for ease of reference) and made eight recommendations to strengthen our approach³. This strategy is part of our response to those recommendations (Annex A – provides details of how the activity in this strategy links to the taskforce recommendations) and also builds on existing good practice. It sets out our plans to enhance existing risk-based activity and to develop

³ https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/200393/pb13878-tree-health-taskforce-final-report.pdf

new and innovative approaches such as a publicly available plant health risk register. It outlines how we will use new scientific and technological tools, and enhance and refine existing tools to, for example, improve detection and identification, better model pest behaviour, improve sampling efficiency, enhance communication including through the use of IT, and apply evidence from the social sciences to understanding what motivates and constrains individuals' and groups' ability to protect plant health.

Demonstrating an efficient response to plant health threats and minimising the risk of outbreaks of regulated and other harmful pests will help the UK's reputation and so increase trust in the quality and safety of exports and imports of plants and plant products, leading to economic growth in the production sector and safeguarding our urban and rural environments.

Scope of the Plant Biosecurity Strategy for Great Britain

This strategy sets out the government's approach to plant biosecurity, which focuses specifically on plant pests. Whilst linking with wider work on plant health more generally (including for example soil health), the biosecurity of animals and the prevention of the incursion of other invasive species, these areas, which are covered by different national and European legislation, are not covered in this strategy. Other invasive species include invasive plants such as aquatic species or Japanese knotweed, as well as insects that do not threaten plants, mammals and birds.

This strategy will build upon and enhance existing activity to deliver an improved biosecurity system which:

- ensures activity is directed at priority pests and pathways and is informed by comprehensive risk assessment, which includes plant pathology, population dynamics, and epidemiology, as well as the social sciences to understand the values at stake;
- meets our EU and international obligations, to enable businesses to trade in clean material and grow;
- ensures everyone (government and its agencies, industry, NGOs, landowners and the public) shares a common understanding of biosecurity and their role and responsibilities;
- ensures that those who benefit from plant biosecurity activity should where appropriate be responsible for that activity, and bear the cost of it;
- ensures the Plant Health Services are able to respond effectively to new and emerging threats;
- ensures GB as a whole is resilient, capable and prepared to respond flexibly to new and emerging threats;
- ensures GB production has a good reputation to allow exports of plants and plant products to develop, with consequent economic and social benefits.

This strategy sets out a vision for what we will seek to achieve by 2020 but is intended to be a living document as it will need to adapt to changes which will occur such as the introduction of a new EU plant health regime and continuing changes in trade patterns. We will review the strategy as required but as a minimum in 2016 to reflect on the work to date and to learn lessons from the enhanced programme and in 2020 a full review will be conducted to measure delivery and to plan for a future strategy.

A Vision for Plant Biosecurity in 2020

Our vision is to protect plants from pests that have been identified as priorities for action, and to build awareness of the risks from pests, knowledge of how to reduce those risks and to introduce a system of management that will incentivise risk reduction.

To achieve this by 2020 there will be:

- An effective and sustainable plant health service which makes risk-based decisions within a transparent, evidence based and consistent framework that is focused on long-term benefits, as well as timely short-term actions to tackle immediate problems;
- Greater awareness of plant biosecurity among government, industry, NGOs, landowners and the public who will have confidence in the plant biosecurity system and will understand and be committed to playing their role;
- Strengthened international regimes for safe movement of plant material in international trade to prevent the arrival of pests;
- Enhanced capability, capacity and collaboration in plant health with enhanced governance and systems in place to share information across all those with a role to play in plant biosecurity;
- New and enhanced technology and scientific tools to enable better detection of pests. This will aim to improve our understanding of pest behaviour, and of the social and behavioural factors affecting biosecurity, enabling us to better target action and increase the chances of success in tackling outbreaks.
- A resilient environment with species choice, design and management approaches ensuring we are more able to deal with pests which become established;
- A revised strategy with refined goals to ensure optimal delivery.

This strategy is not simply about what government will do to improve plant biosecurity since safeguards are not a matter for government alone. Many plant importers, nurseries and landowners already play a major role in minimising the spread of pests through practising good biosecurity, including sourcing clean stock and identifying outbreaks on their sites. This strategy sets out how this role will be enhanced, strengthened, and expanded to encompass all plant importers, nurseries and landowners with responsibility sitting with those best placed to manage the risks. NGOs and the public are already playing a role in helping to spot signs and symptoms of plant pests and we will work to

strengthen the capacity of these groups and individuals to complement enhanced official surveillance.

A collaborative approach between government, the international community, industry, NGOs, landowners and the public is the best way to reduce the risks of pests entering GB, better mitigate the impact of newly established pests, and in the longer-term make our businesses and our environment more resilient to the threats from pests. The value of a collaborative approach was shown recently through the response to both *Chalara fraxinea* (ash dieback) and *Anoplophora glabripennis* (Asian longhorn beetle) which relied not just on government input but also on contributions from industry, NGOs, landowners and the public.

Overview

The risk-based approach to plant biosecurity described in this strategy sets out how we will:

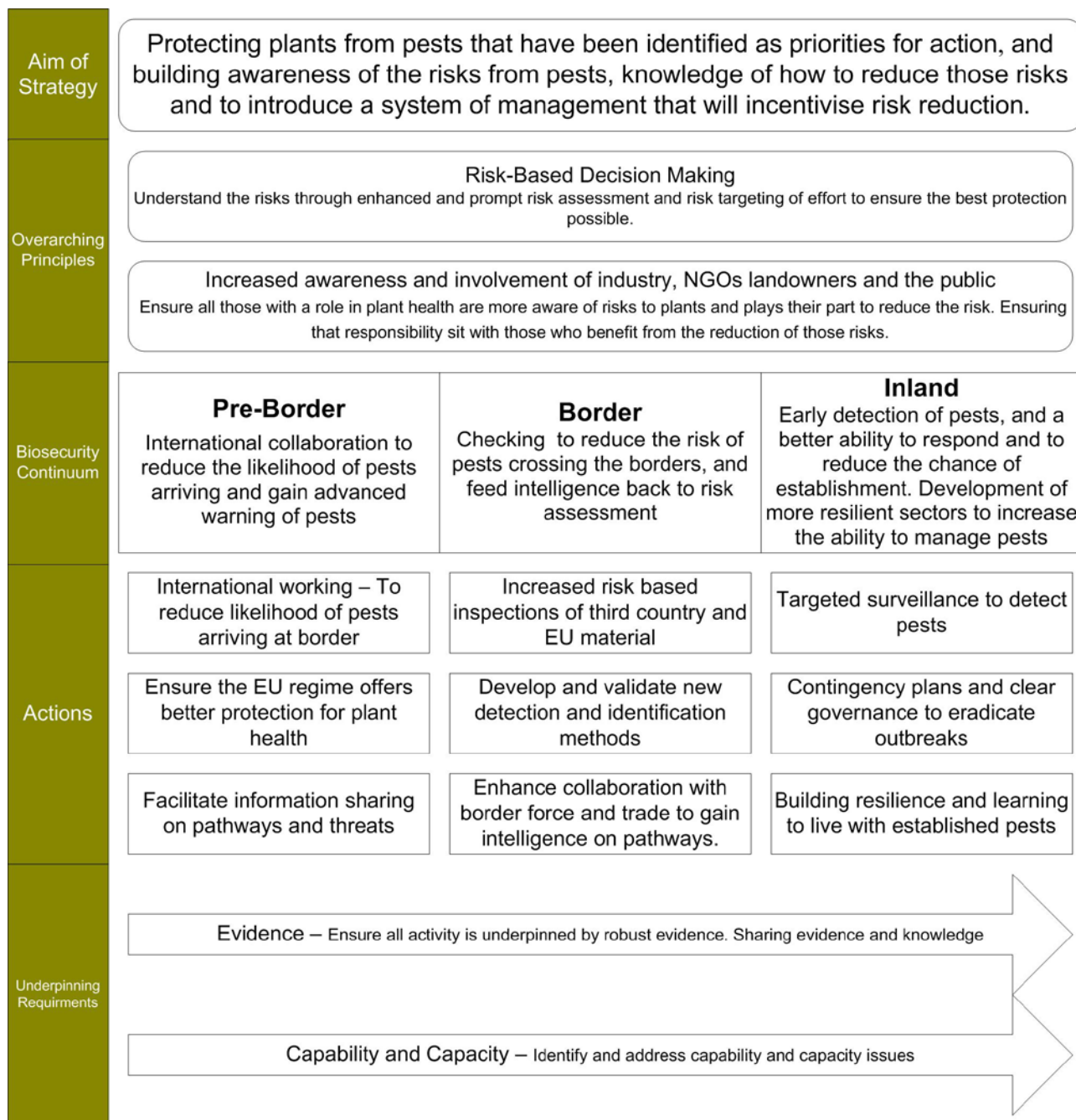
- Work with suppliers and exporting countries to tackle pests at source (pre-border) to minimise the risk of their arriving in GB
- Ensure we are fulfilling our international obligations and supplying clean plants and plant material through the health certification of plants and plant product for export.
- Tackle pests at the border through risk targeted import inspections;
- Detect pest outbreaks inland through surveillance by government and its agencies, industry, NGOs, landowners and the public;
- Rapidly tackle outbreaks which do occur to provide the best chance of eradication and to minimise their costs: and
- Increase social, environmental and economic resilience to mitigate and where necessary adapt to the potential future impacts of pests.

This approach is referred to as the biosecurity continuum and is widely applied internationally. The stages of the continuum include important feedback loops with interceptions at the border reported back to rectify failings in exporting countries, and management of outbreaks providing evidence and intelligence for risk assessment. We will look to enhance biosecurity at all points on this continuum through the enhanced activity described in this strategy.

As a member of the EU, the UK is part of the Single Market and free movement of goods within that market is a fundamental principle. This means that good biosecurity around the whole EU border is crucial to the UK's biosecurity and that of other member states.

Figure 1 provides an overview of the approach government will take in this strategy to tackling pests as part of a biosecurity continuum, with activity pre-border, at the borders and inland.

Figure 1: Overview



Further detail of this programme is provided in the following sections.

Overarching Principles

Ensuring that activity is risk-based and that all those with a role in plant health are aware of these risks and playing their part to reduce them are the fundamental principles of this strategy.

Risk-based Decision Making

Understand the risks, through enhanced and prompt risk assessment, to stay ahead of pests. Ensure that activity and decisions are risk-based and targeted to deliver the best protection possible.

It is vital to understand the risks we face and risk-based, proportionate and value-for-money decision-making underpins all other activity in this strategy. There are thousands of pests which can affect the health of plants, and an up to date risk register ensures we are directing activity most effectively as it is unrealistic to expect that we can provide effective protection from all pests. The risk register will be a dynamic tool, to be updated in response to new developments. Where appropriate, this will include the emergence of new strains or detection of previously unknown effects of pests. For example, there are currently separate entries in the Register for European and non-European populations of the same species of Potato Cyst Nematode (because of the differing levels of virulence inherent in such populations).

The assessment of risk drives the EU plant health regime which targets those pests identified as highest risk. A UK wide Plant Health Risk Group undertakes a monthly review of threats. Potentially serious pests are subject to a detailed Pest Risk Analysis (PRA) following internationally agreed methodologies. Import inspections are based on risk-based EU targets and in addition inspections are carried out of other material focussing on those trades posing the greatest risk. Inland inspections and surveillance are also risk-based; using EU decisions, outcomes of PRA or targeting premises assessed as providing the greatest potential for distributing pests. Risk assessment feeds into the development of contingency plans and approaches to outbreak management to ensure that actions taken are correctly targeted, proportionate and effective.

To enhance this activity we will:

- **Create and maintain through regular review a publicly available risk register to prioritise activity to tackle key pests.** To achieve this we have produced a risk register which rates the risks posed by over 650 pests and ranks them according to priorities for action. The methodology will be refined, and we will continue to develop and review this register to include risks from various pathways, and to identify any new and emerging pests or impacts through horizon scanning.

- **Undertake additional PRAs as prioritised by the risk register.** We will create a centre of excellence for Pest Risk Analysis which will undertake more PRAs, with priority given to those pests assessed as potentially significant on the risk register but with high levels of uncertainty. These will be carried out according to prescribed international standards with enhancement to include additional assessment of spread potential and socio-economic impacts etc. as necessary. We will share knowledge internationally through collaboration on risk assessment (including making use of international PRAs where these are available) and work with industry to gain trade intelligence.
- **Create commodity and pathway risk assessments to help deal with known and unknown pests.** Risks are usually assessed on a pest-specific basis, but commodity or pathway assessments can be helpful in examining threats associated with particular trades or pathways of introduction.
- **Ensure a risk-based approach to inspections to deliver the greatest level of protection.** Ensuring that we meet EU requirements for inspections of controlled trades whilst also targeting uncontrolled trades to help identify new and emerging risks.
- **Use the risk register to identify and prioritise evidence needs and feed this into the research programme.** This will enable targeted R&D to develop and enhance our understanding of plant pests and how best to manage their risks and impacts. It is vital that the risk register is underpinned by robust interdisciplinary evidence.
- **Use the risk register to identify gaps in our contingency plans.** This will ensure that the production of our contingency plans is prioritised according to the greatest threats.
- **Communicate risk clearly through the publication of the risk register and of PRAs as part of an integrated package of tools to mobilise people to adopt biosecurity behaviours.** This will provide industry and others with information on how to play their part in managing risks to their business and the wider environment as effectively as possible. Industry associations, NGOs and others can assist in disseminating this information, reminding individuals of their obligations and the steps they can take to tackle pests not identified as priorities for government action.
- **Ensure that we have sufficient capability to undertake risk assessments.** This is linked to the underpinning requirement to increase capacity more widely (which includes an assessment of the UK's future needs for capability in animal and plant health).

While the risk register and the action it identifies will be important tools in helping us to manage and prepare for known threats, there will always be some threats that we cannot plan for because we are not yet aware of them. Many of the actions set out in this strategy will increase our resilience to these unforeseen risks, and improve our capacity and capability to deal with them should they materialise.

Raising Awareness and Involvement

Ensure all those with a role in plant health are more aware of plant health risks and know what they can do to reduce them. Ensure that, where appropriate, responsibility sits with those who benefit from the reduction in risk.

To provide the best protection, government, its agencies, industry, NGOs, landowners and the public require increased awareness of the risks to plants, together with the biosecurity measures to minimise them (including avoiding spreading pests through surveillance and outbreak management activity). It is critical that we improve understanding of what motivates and constrains individuals and groups in achieving biosecurity outcomes, and use this evidence to develop an integrated package of measures to mobilise and enable different groups to act.

We must maintain the principle that those who benefit from plant biosecurity activity should where appropriate be responsible for that activity, and bear the cost of it. For example, if pests are found during import inspections the importer is responsible and bears the cost of the loss of the consignment and its disposal. This has already proved an effective approach: improvements in the quality of exports have occurred in response to high levels of interceptions. For example major exporting countries have developed systems of treatments to eliminate pests prior to export in light of high levels of interceptions of pests on fruit and vegetables.

As well as strengthening the way we communicate risk, we will further enhance the allocation of responsibility by:

- **Developing with industry a regime for the sharing of costs and responsibility for plant health.**
- **Working with industry to improve information sharing.** To ensure official action is informed by trade intelligence and industry is aware of the risks and actions they can take to mitigate these.

The value of the input from public and industry was highlighted during the response to *Chalara fraxinea* (ash dieback), when they made a major contribution to the effort to identify its extent. Raising awareness of plant biosecurity and developing an integrated package of measures to mobilise people to act (drawing on a range of policy and communications tools to influence behaviour) is therefore a key element of this strategy. We are currently reviewing the awareness-raising activity conducted to date and will use the results to determine how best to enhance this activity. This is likely to include:

- **Increased publicity to raise awareness within industry, NGOs, landowners and the public of the risks posed by plant pests and measures to avoid their introduction and spread.** This will include posters and publicity, show gardens, training events and potential secondments with industry, and promoting the benefits of quarantine of imported stock. Industry and government will work together to ensure awareness raising activity is co-ordinated to ensure a consistent message, and targeted to reach the right audience at the right time.
- **Inspectors working with Border Force staff in passenger channels at airports and ferry ports to raise awareness of biosecurity issues.** This will highlight to passengers the risks posed by the importation of plant material and lead them to think again about bringing such material into the country.
- **Make use of and support existing networks of individuals with an interest in plant health.** Including supporting public participation in scientific research (citizen science) through initiatives such as Open Air Laboratories (OPAL) and ObservaTREE which seek the public's help in identifying tree pests. These will provide a cadre of trained members of the public able to spot outbreaks of plant pests thereby increasing capability and capacity. We will ensure that these individuals are aware of biosecurity and plant hygiene to avoid spreading pests through their own activities.
- **Develop an information portal to enable access to information on plant pests.** This will be used to provide a single source of accurate and up to date information which will assist in ensuring consistent messages on plant health. It will also enable simplified reporting for all those involved in plant health.

Biosecurity Continuum

We will take action pre border, and at our borders to prevent pests being imported or exported. We will take action inland to identify pests, respond to outbreaks, and to build resilience.

Activity Pre – Border

Through international collaboration reduce the likelihood of pests arriving and gain advanced warning of pests which may pose a risk to Great Britain.

The best way of preventing pests reaching our borders is through effective application of control measures by the producers and authorities in third countries. To achieve this the UK operates within a regime determined by both EU regulations and international agreements. A review of the EU plant health regime is currently underway to respond to defects identified in a 2010 evaluation and to ensure an effective system of EU import requirements. This review provides an opportunity to secure significant changes to plant health controls, and to introduce a new regime more consistent with the UK Government's aims.

The UK takes a leading role in international plant health participating in many EU missions and taking on key roles in international bodies to reduce the risk of importing or exporting pests. Currently the Plant Health Services are one of the biggest provider of on the ground inspection and diagnostic training for other EU countries and also provide this outside the EU. To maintain and build upon existing work at the international level we will:

- **Work closely with EU partners to ensure that the EU regime offers better protection for plant health whilst following a risk-based, evidence led approach.** Negotiate a robust regulatory framework which provides improved protection for the UK whilst facilitating trade growth.
- **Engage in global initiatives to improve plant health to drive up compliance and facilitate trade.** We will continue to play an active role through the International Plant Protection Convention's Commission on Phytosanitary Measures, European and Mediterranean Plant Protection Organization and others. This will include the production of international standards to promote consistency and safeguards amongst participating members.
- **Share approaches to tackling plant health risk through interchange with plant health professionals from other countries.** Secondments of plant health inspectors, diagnosticians and other staff to share approaches and knowledge.

- **Facilitation of information sharing on pathways and threats.** Sharing knowledge with international partners on the risks and pathways identified as threats, so that appropriate national and international regulations can be put in place to ensure better plant protection for GB.
- **Work proactively with overseas exporters.** Promote and participate in initiatives which facilitate direct contact with third countries to improve implementation of phytosanitary programmes and ensure import requirements are met. Encourage importers to support their supply chain and promote best practice.
- **Work with GB exporters to ensure they are aware of their responsibilities to inspect material and not spread pests.** Providing health certification of plants and plant products for export to ensure that wider global plant health biosecurity is maintained. Preventing the export of pests to enhance our international reputation and benefit trade by gaining a reputation for supplying clean material.
- **Share information on pest behaviour internationally,** including the development of an international sentinel plant network to share information on pests attacking plants native to other regions and work with other European countries on campaigns to raise awareness and improve early detection across the region.
- **Assess potentially threatening trades before they commence to determine the need for controls.** Use trade intelligence to identify information on potential new trades.

This pre-border activity will lead to a regime of import controls designed to prevent harmful plant pests from entering the EU from third countries; the next section describes activity to ensure that this regime is operating effectively and to prevent pests from crossing the border.

Activity at the Border

Through checking compliance of exporters, reduce the risk of pests crossing the border. Use intelligence gathered through border inspections to further develop and refine risk assessment.

A regime of import controls (documentary checks and physical inspections) exists to verify that EU import requirements have been met and to detect any pests present on imported consignments. These checks monitor the effectiveness of procedures in exporting countries.

As a member of the EU, our external borders form part of those around a Single Market with a wide range of plants, in different climates, all requiring protection from risks

presented by imports from other continents. In addition to the EU border, the UK has its own domestic border for material moving within the EU.

Intra EU Movement – The UK Border

Whilst the Single Market does not limit our ability to take justified action there are no routine border checks for plants and plant material travelling between EU member states (including material which has entered the EU via another member state). However, spot checks may take place anywhere in the trade chain, and there is scope for intervening when an emerging threat in one member state threatens plant health in other member states. Protected Zone (PZ) status (areas designated under EU legislation where a pest is not established) for certain pests can be agreed; for example parts of the UK are a PZ for Fireblight, while the whole country is a PZ for Colorado beetle and Sweet Chestnut Blight.

Global Movement – The EU Border

The EU plant health regime applies a risk-based categorisation of material from outside the EU. It classifies plant and plant material into one of the three groups below:

- **Prohibited:** Import to the EU is only permitted for specified purposes, such as research or trialling, under authority of a licence issued by government.
- **Controlled:** Requires a phytosanitary certificate issued by the plant protection service of the exporting country. There are EU requirements to undertake check inspections of this material at import.
- **Uncontrolled:** Not subject to plant health controls and no notification is made on importation. This includes nearly all flower seeds, some cut flowers and fruit, most vegetables for consumption, biomass pellets, and furniture containing finished wood products.

The UK undertakes import inspections to check that requirements have been correctly followed and to intercept material or pests that have evaded these controls. These inspections are undertaken to meet EU requirements on inspections of controlled material and also to undertake risk targeted inspections on uncontrolled consignments to check for pests in this material.

To strengthen the existing inspection activity we will:

- **Increase risk-based inspections of both EU and non EU material at points of entry.** This will allow inspections of EU material to take place before plants and plant products are distributed within GB. Increased inspections of uncontrolled trades, including new and emerging trades, will provide evidence to support regulation of these trades and will assist in identifying emerging threats. As set out in the overarching principles, importers will carry the risk should a pest be found in a consignment as the value of the consignment will be lost and they will need to pay any destruction/re-export, processing costs involved.

- **Develop and validate new detection and identification methods and refine existing methodologies to ensure rapid results.** This will include ensuring sufficient laboratory capacity in the right places and will ensure that the time consignments need to be held is minimised.
- **Enhance collaboration with the Border Force and the trade to gain greater intelligence on pathways.** This intelligence will feed into risk assessment and assist in ensuring that activity is targeted to areas of greatest risk. We will also review the current passenger baggage concession.

Activity at the border will provide indications of where the import regime is not operating effectively, allowing work to be undertaken at the international level to rectify this. In addition it will assist the targeting of surveillance and inform contingency planning.

Activity Inland

Through early detection and identification of pests, together with having a greater capacity to respond to outbreaks, reduce the chance of pests establishing in Great Britain. Through the development of more resilient sectors, increase the ability to manage pests.

When plant material is traded, there is always a risk of pest introduction. However not all pests will be introduced via plant material imports, with some being windborne, and others being transported in wood packing material or soil associated with other imports. Action at the border can therefore never reduce the risk of known pests arriving to zero, and there will be those unforeseen pests for which we had no specific plans in place. There will therefore be an ongoing need to undertake inland inspections at nursery sites and wider surveillance in urban and rural environments, and to build resilience so that our agricultural, horticultural and forestry sectors are able to withstand the impact of pests and, where damage occurs, to recover quickly.

If an outbreak of a priority pest is identified we need to have a contingency plan in place to carry out a rapid and proportionate response. In some cases eradication or containment will not be achievable, so the appropriate response will be for governments to work with the affected industry sector to reduce impacts. In the case of an outbreak of a pest which is not a priority there may be no role for government and it will be for industry to decide how best to respond. To provide protection in the longer term governments need to work with industry, NGOs, landowners and the public to increase resilience to the threats from pests. Inland activity includes:

Plant passports

A limited range of EU material which hosts the most serious 'quarantine' pests and diseases requires a plant passport to facilitate its movement. Where required, a plant

passport is needed both for movements within and between EU member states, with additional requirements applying to movements into and within Protected Zones.

The plant passporting system provides a framework of supplier information for many hosts which can be used to trace new previously unknown pests. The system, with built in inspection, gives the Plant Health Services the opportunity to increase surveillance visits and to work with nurseries to educate growers in general symptom recognition to enable them to better identify pests.

To enhance the plant passporting scheme as a mechanism to reduce the risk of spread of EU regulated quarantine pests we will:

- **Work with other member states to extend the range of species covered by plant passports as necessary.**
- **Raise public awareness of the EU plant passporting scheme** to boost confidence in the health of the plants they are buying.
- **Enhance notification of high risk intra-EU trade to facilitate monitoring of compliance with passport requirements.** This will supplement the plant passporting scheme to enable monitoring of high risk trades from within the EU.

Surveillance and inland inspections

To check for the presence of pests at nursery sites the Plant Health Services undertake quarantine surveillance at sites where imported plants are grown. Surveillance is also undertaken to confirm the absence of specific pests to enable the establishment of Protected Zones. In addition, the National Forest Inventory records tree health status in sample plots to provide a perspective on overall tree health across GB. Surveillance is also undertaken to determine the extent of pest outbreaks to support the outbreak management process described below. We are further supporting citizen science and industry training schemes to ensure a large cadre of knowledgeable individuals are able to support government surveillance and assist in identifying plant health issues.

To build upon existing surveillance work we will:

- **Increase the capacity of the Plant Health Services to undertake surveillance including:**
 - Undertaking surveys to establish additional Protected Zones for known threats (as prioritised through the risk register) not currently present and detect any outbreaks of protected zone pests.
 - Risk-based surveillance for early detection of known 'quarantine' pests through targeted surveillance and monitoring systems. This will include a focus on areas in the wider environment which are currently not well covered to ensure problems are identified early.

- Development of new approaches to; find pests through new detection and identification methods (for example, studying sentinel plants planted at key locations or using molecular techniques for identification of new pest threats in samples from existing networks); integrate current knowledge and make pest predictions through advances in modelling; improve sampling efficiency through the use of statistics; integrate information; improve communication (for example through the use of IT); and utilise social sciences to improve understanding of what motivates and constrains individuals and groups in achieving biosecurity outcomes.
- Reviewing and refining our current approach to surveillance and monitoring. This will develop a clearer understanding of the responsibilities and skills that need to be retained and enhanced, to manage evidence from a wider range of sources. This also includes assessing where we can further apply citizen science to add value to surveillance and monitoring.
- **Use existing networks, and expertise from industry, NGOs, landowners and the public (e.g. through citizen science) to provide information on the distribution of pests and their host species.** We will provide clear arrangements for reporting this information, including reporting the absence of pests.

Increased surveillance will avoid wasted effort in trying to eradicate or contain pests which are found to be widely established. It will also confirm the absence of pests when action to prevent establishment has been taken, providing reassurance that it has been effective. We will ensure that all individuals undertaking surveillance and inspection activity are aware of biosecurity and plant hygiene to avoid spreading pests.

Preparedness

Contingency plans help to ensure a rapid and effective response in the event of a pest outbreak. These plans include governance of the response through Outbreak Management Teams. To improve preparedness we will:

- **Develop and refine contingency plans.** We will review and update existing contingency plans and develop new plans for priority pests as identified through the risk register. We will produce a new generic contingency plan supported by a number of specific plans for priority pests and pathways. We will ensure interested parties play a role in the development of these plans and are clear on their responsibilities in the event of an outbreak.
- **Test contingency plans to ensure that they are fit for purpose and learn lessons to be applied in the event of an outbreak.** We will widen the scope of our contingency planning exercises to include relevant delivery partners and stakeholders. Lessons from these exercises will be used to review the plans.

- **Produce models to understand better the likely impacts of known pests, and generic models for novel threats.** We will gather data to enable robust models to be produced and in England we will expand the capacity to deliver outputs in real time as required for an outbreak response by developing a shared modelling consortium based on plant and animal health expertise. This will not only allow us to obtain a better understanding of known pests but it will also prepare us for novel ones.

Outbreak Management

We need to ensure we are able to manage any outbreaks which do occur by ensuring sufficient capability and capacity to respond. Measures are in place to manage a number of outbreaks including *Chalara fraxinea* and *Phytophthora ramorum*. We will ensure that the lessons learned from managing these outbreaks inform our approach in the future. We will ensure evaluation is fully embedded within outbreak management programmes to enable us to determine how best to deploy an evolving set of available tools to prevent and control disease, assess their cost-effectiveness and adapt our policies where necessary. We will increase the capacity of the Plant Health Services to:

- **Manage priority pests (as defined by the risk register) already present in GB where eradication or containment is possible or co-ordinated control will have long term social, economic or environmental benefits.** The level of government involvement in such areas will take account of the wider public interest, the commitment to deliver healthy ecosystems, and any legally prescribed responsibilities (e.g. the Forestry Commission's wider responsibility to protect the health of the nation's forest trees, and the statutory nature conservation bodies' responsibilities on biodiversity).
- **Facilitate the development and approval of potential treatments against specific pests, and methods of disposal for infected plant material.** This will enable control options to be in place ahead of an outbreak occurring, enable industry and landowners to undertake treatment of their plants, and enable disposal of material that has to be destroyed as part of containment or eradication activities.

Increasing resilience

We need to increase resilience and encourage adaptation to mitigate the impacts of pests, even where it is not possible to control or mitigate the spread. To increase resilience we will:

- **Work with industry to improve sourcing of material, adoption of biosecurity best practice, and the ability to adapt to established pests.** We will support industry to develop certification schemes and will undertake measures to improve the clarity of the provenance of plant material. This will include a new British Standard and adoption by the nursery stock (including trees) industry of a Charter mark scheme, and safe sourcing practices.

- **Work with the EU and industry to provide statutory certification schemes.** The EU is currently developing harmonised schemes for planting materials, including fruit, and we will continue to work with industry as negotiations progress. We will continue to meet our statutory responsibility to operate a Seed Potato Classification Scheme, to ensure the quality of seed potatoes being marketed.
- **Work with interested parties to design and adapt management practices to mitigate the impact of newly introduced or established pests.** Government's involvement would vary depending on the extent of the wider public interest, the commitment to deliver healthy ecosystems, and any legally prescribed responsibilities.
- **Further work on Tree Health Policy as set out in the Tree Health Management Plan for England to help protect the health of our trees and build the resilience of forests, woods and non-woodland trees to established and future pests.** Working with stakeholders through the Tree Health Policy Group in England we will develop strategic responses to outbreaks of tree pests and pathogens that are established or at (imminent) risk of establishing in England, as well as working to build economic and environmental resilience of our forests, woods, and non-woodland trees.
- **Work with existing mechanisms to support increased resilience of woodlands.** For example the Rural Development Programme for England, a key funding mechanism to help build resilience in our woodlands and promote biodiversity objectives, will be used where appropriate to respond to specific outbreaks. Through the England Woodland Grant Scheme we are providing support for the removal of infected young ash trees and replanting with alternative species.
- **Work with existing mechanisms to support increased industry resilience:** Grown in Britain is a Government backed industry led umbrella organisation that brings together a broad diversity of forest, woodland, societal, manufacturing and end user interests with government and the sector working in partnership towards a common goal of stimulating demand for British wood products. It's already delivering results, including gaining commitment from several major companies to buy or stock more home-grown wood products.

There are linkages within inland activity, with experience from managing outbreaks providing intelligence for contingency planning which then influences surveillance activity. Inland activity also provides intelligence to assist in setting new controls pre-border at the international level.

Underpinning Requirements

Gathering and using evidence and ensuring we maintain sufficient capacity and capability to underpin activity across the strategy.

Evidence

Ensure all activity is informed by robust evidence to ensure value for money. Proactively share evidence across government, its agencies, industry, NGOs, landowners and the public.

Robust evidence, brought together from a wide range of disciplines and perspectives, underpins risk-based decision making and is an integral part of the new plant health risk register. The risk register will provide a tool for synthesising this evidence and establishing priorities for intervention and further research, enabling us to be clear about the case for government intervention and the role and responsibilities of wider stakeholders.

Where there is a clear role for government, impact assessments are routinely produced to understand the costs and benefits to society that flow from changes in policy, ensuring we derive the most benefit from the resources available. As well as ensuring we have robust up-to-date information on the value of agricultural and horticultural production and trade in plants and plant products, including timber, we also need to assess those elements which cannot easily be given a monetary value in order to determine the full social, environmental and economic impact of pests and the policies intended to address them. These include the importance of trees, parks, woodlands, and other susceptible environments to our culture, wellbeing and ecosystem services.

Proportionate monitoring is required to understand how policies are being delivered and whether they are being implemented as intended. This serves to establish a baseline to inform subsequent evaluation and also offers the opportunity for activities to be adapted to be more effective. As part of the governments' evidence programme, we are exploring how best to design evaluations to assess impact on complex systems. This includes approaches for understanding the interactions between biological and social factors and innovative data analysis methods.

To deliver and communicate the best-possible evidence we will:

- **Undertake additional research which combines a long-term programme of strategic research with more applied, responsive research.** This will improve horizon scanning and our understanding of how to enhance the resilience of ecosystems whilst also ensuring that we have in place immediate analysis to support risk assessment, contingency planning, surveillance (including earlier detection) and practical management actions we can share with industry, NGOs, landowners, the public and international plant health authorities.

- **Work collaboratively with others across the UK, EU and beyond.** This will enable us to maximise the funding available and access the best possible research base. We have already begun this through EUPHRESKO, the European research network and the interdisciplinary “Living With Environmental Change” (LWEC) Tree Health and Plant Biosecurity Initiative. The latter is co-funded and co-designed with the Research Councils and we will continue to build similar national and international collaborations.
- **Develop comprehensive and accessible data to underpin policy and operational decisions.** This will include better access to intelligence from abroad, an enhanced modelling capability and a new plant health information portal. This web-based information system will improve the accessibility and ease of use of the vast amount of data available on plant health. The prioritised plant health risk register will be a key part of this new information system.
- **Develop an evaluation strategy for plant health.** This will enable us to determine how best to deploy an evolving set of available tools (including understanding behaviour and behavioural impacts) to prevent and control pests, assessing their cost-effectiveness and adapting our policies where necessary.

Capacity and capability

Identify and address capability and capacity issues in government, its agencies, industry, NGOs, landowners and the public.

Sustained improvements in the plant health regime depend on having in place the underlying scientific and technical capacity and capability. We need to identify the contribution required from government to protect the critical mass of core capability, whilst creating opportunities for a wider community of trained plant health professionals. To deliver this we will:

- **Work to ensure that we have capability and capacity across the key scientific disciplines to meet our future needs.** We will build research and science capability and capacity strategically, including through the use of fellowships and by exploring the establishment of virtual research centres. The UK Government Chief Scientific Adviser, Sir Mark Walport, in association with the Defra Chief Scientific Adviser, Professor Ian Boyd are undertaking a study to determine the UK’s future needs for capability in animal and plant health which will report in summer 2014. This study will provide a clear, succinct assessment of what the UK’s needs and evidence capabilities will be during the next 10-15 years and the processes and delivery structures which will be needed to implement effective change.

- **Work across the education sector at all levels from primary schools to higher education initiatives.** We will engage the next generation by encouraging the education sector to include plant biosecurity on their curriculum and helping them to develop training materials. Maintaining capacity and capability in plant health will help encourage students to view plant health as a viable career option.
- **Work with professional bodies to embed greater awareness of plant health as a key competence and component of continuous professional development, and enhance the official training programme for inspectors to provide a better and more professional service.** We will look to develop a formal qualification for inspectors.
- **Refine IT and administrative arrangements for inspectors ensuring compatibility across the Plant Health Services.** This will enable us to use our skilled resources more effectively.
- **Develop information sharing on pathways and threats between government, its agencies, the international community, industry, NGOs, landowners and the public.** We will ensure collaboration and cross working across government, industry and academia.
- **Develop and validate new scientific and technological methods and tools to improve detection and identification, modelling, and use of statistics.** This will include ensuring sufficient laboratory capacity in the right places.

Ensuring capability and capacity also means that we should increase confidence in the ability of the Plant Health Services to deliver what is required of them, including learning lessons from activity we undertake to ensure continual development. To achieve this we will:

- **Maintain and enhance ISO Accreditation** including laboratory staff and inspectors as appropriate.

We will also develop clearer governance of plant health to ensure that a robust programme is supported by all those involved. There also need to be clear routes to communicate specialist and stakeholder advice to policy makers and Ministers. To achieve this we will:

- **Review and revise existing governance procedures to provide direction and accountability for dealing with pests.** This will include clarifying responsibilities for activities across the biosecurity continuum including international negotiations, inspections, surveillance and outbreak management, and working with stakeholder advisory groups to ensure collaborative working towards mutual goals. We will look to identify and close any potential gaps in responsibility and will ensure government is working together effectively

- **Review and confirm co-ordination arrangements between the Plant Health Services, Republic of Ireland, and cross-national organisations.** To build on existing approaches and ensure a joined up approach to tackling plant health threats which reflects devolved policy responsibilities.
- **As part of the Red Tape Challenge in England, we have reviewed all plant health legislation.** An outcome from this review is a proposal to consolidate certain important regulations and to consult on revoking those where the powers are no longer required.

This activity will provide a strategic approach to ensure capability and capacity is available now and maintained in the future.

Annex A - Taskforce links

In response to the identification of Ash dieback in GB the Secretary of State for Environment, Food and Rural Affairs commissioned the Defra Chief Scientific Adviser, Professor Ian Boyd, to establish an independent taskforce, chaired by Professor Chris Gilligan, to reflect on the challenges, investigate how plant health functions are performed and make recommendations about how GB should protect tree health and strengthen plant biosecurity. Ministers thanked Professor Gilligan and Professor Boyd for their work in developing the reports eight recommendations, all of which have been accepted by the Secretary of State and Scottish and Welsh Ministers. This strategy is the government's response to the recommendations of the taskforce report and this annex details how the activity outlined in the strategy will meet the taskforce recommendations.

Taskforce recommendation	Comments and links to the strategy
National Context	
<p>Develop a prioritised UK Plant Health Risk Register.</p>	<p>This forms an element of the overarching principle that we should undertake risk-based decision making.</p> <p>We have created and will maintain a publicly available risk register to prioritise activity to tackle key pests. To achieve this we have produced a risk register which rates and ranks the risks posed by over 650 pests. We will continue to develop this risk register to include risks of various pathways. We will undertake additional pest risk analyses as prioritised by the risk register. We will use the risk register to identify evidence needs and to feed this into the research programme. We will also use the risk register to identify gaps in our contingency plans.</p>
<p>Appoint a Chief Plant Health Officer to own the UK Plant Health Risk Register and to provide strategic and tactical leadership for managing those risks.</p>	<p>This forms part of the underpinning capability and capacity element of this strategy.</p> <p>Defra has appointed a UK Chief Plant Health Officer.</p>

Taskforce recommendation	Comments and links to the strategy
<p>Develop and implement procedures for preparedness and contingency planning to predict, monitor, and control the spread of pests and pathogens.</p>	<p>This is a key element of the inland activity covered by this strategy.</p> <p>Work is already underway to review and revise our contingency planning arrangements and we are in the process of enhancing the capacity to identify and manage any outbreaks which occur.</p> <p>We will review existing contingency plans to ensure they are up to date and will in addition develop new plans for priority pests. We will produce a generic contingency plan supported by a number of specific plans for priority pests and pathways. We will widen the scope of our contingency exercises to include all the relevant delivery partners and stakeholders to test the existing plans. We will use lessons from these exercises to review plans. We will gather data to enable robust models to be produced to underpin contingency planning.</p>

Taskforce recommendation	Comments and links to the strategy
<p>Review, simplify, and strengthen governance and legislation.</p>	<p>This forms part of the underpinning capability and capacity element of this strategy.</p> <p>We have created a policy team within Defra and implemented a joint programme board to manage and ensure the delivery of an enhanced programme for England.</p> <p>We will further strengthen existing governance procedures to provide direction and accountability for dealing with existing and future pest outbreaks. We are already, through the UK Plant Health Risk Group, reviewing new and revised plant health risks on a monthly basis which helps to identify priorities for action, including new regulation, simplified regulation or deregulation. We will review and confirm co-ordination arrangements within the UK nations to ensure a joined up approach to tackling plant health threats whilst reflecting the devolved nature of responsibilities.</p> <p>We are negotiating for a new EU regime which achieves: faster decision making as plant health risks change and new pests arrive; better risk targeting, including regionalisation where appropriate, and a shift of inspection effort from plant produce to higher risk plants and propagating material; and more co-operation between plant health inspectorates across the EU and between plant health and customs services. We will develop with industry a regime for the sharing of costs and responsibility for plant health.</p> <p>As part of the Red Tape Challenge, Defra has reviewed all plant health legislation. An outcome from this review is a proposal to consolidate certain important regulations and to consult on revoking those where the powers are no longer required.</p>

Taskforce recommendation	Comments and links to the strategy
International Context	
<p>Improve the use of epidemiological intelligence from EU/other regions and work to improve the EU regulations concerned with tree health and plant biosecurity.</p>	<p>This is a key element of the pre-border part of the strategy.</p> <p>Work is already underway to ensure an enhanced EU plant health regime together with better information sharing with international partners.</p> <p>We will participate in International Plant Protection Convention processes, to promote learning and capacity building and develop International Standards, which help to drive up compliance and facilitate trade. We will undertake secondments of plant health inspectors, diagnosticians and other staff to share approaches and knowledge. We will promote and participate in EU and international initiatives which facilitate direct contact with third countries, particularly those which have proved to be the source of persistent interceptions. We are investing in an international sentinel plant network.</p> <p>We will look to develop a shared understanding with other Member States of how epidemiological models could be used to analyse information about disease spread and the effectiveness of control strategies. We will look to develop and enhance intelligence and data sharing with trading partners to enable improved assessment of risk.</p>
<p>Strengthen biosecurity to reduce risks at the border and within the UK.</p>	<p>This is a key element of both the border and inland activity and also covers elements of the overarching awareness raising activity.</p> <p>We will undertake increased inspections and surveillance and will raise biosecurity awareness in government, its agencies, industry, NGOs, landowners and the public. We will use a risk-based approach to target inspections to highest risk material whilst ensuring we also meet our international obligations. We will enhance the plant passporting scheme as a mechanism to detect quarantine pests.</p>

Taskforce recommendation	Comments and links to the strategy
Capabilities and Communication	
<p>Develop a modern, user-friendly system to provide quick and intelligent access to information about tree health and plant biosecurity.</p>	<p>This forms part of both the underpinning capability and capacity and the overarching public awareness elements of this strategy.</p> <p>We will scope, design and begin the development of a holistic plant health information system. This web-based information system will improve the accessibility and ease of use of the vast amount of data available on tree and plant health. The prioritised plant health risk register will form a key component of this information system.</p>
<p>Address key skills shortages.</p>	<p>This forms part of the underpinning capability and capacity element of this strategy.</p> <p>We are developing a strategic approach to plant health research and evidence, sustaining our core capability, including succession planning, attracting new researchers and new ideas e.g. through closer links with universities to develop a new cohort of Plant Health scientists.</p> <p>The UK Government Chief Scientific Adviser, Sir Mark Walport, in association with the Defra Chief Scientific Adviser, Professor Ian Boyd are undertaking a study to determine the UK's future needs for capability in Animal and Plant Health which will report in summer 2014.</p> <p>We will build research and science capability and capacity strategically, including through the use of fellowships and by exploring the establishment of virtual research centres. We will seek to access and use expertise more widely in Europe and internationally where appropriate. We will enhance the official training programme for inspectors, and will look to develop a formal qualification.</p>

Annex B - Glossary

Biodiversity - This is the term given to the variety of life on Earth.

Biomass - Biological material derived from living, or recently living organisms.

Biosecurity - A set of precautions that aim to prevent the introduction and spread of harmful organisms.

Biosecurity continuum - Offshore, border and onshore activities.

British Standard - Recognised national standards of quality for goods and services based upon the principles of standardisation recognised *inter alia* in European standardisation policy.

Certification schemes - Process of certifying that certain seeds, plants or produce meet specified quality and/or phytosanitary standards.

Citizen science - Scientific research conducted, in whole or in part, by amateur or nonprofessional scientists.

Consignment - A quantity of plants, plant products and/or other articles being moved and covered, when required by a single phytosanitary certificate.

Containment - Application of phytosanitary measures in and around an infested area to prevent spread of a pest.

Contingency plan – A contingency plan describes how government, and operational partners, prepare for and respond to a pest outbreak or incident.

Ecosystem - A dynamic complex of plant, animal and micro-organism communities and their non-living environment interacting as a functional unit.

Ecosystem services - Services provided by the natural environment that benefit people.

Eradication - Application of phytosanitary measures to eliminate a pest from an area.

Establishment - Perpetuation, for the foreseeable future, of a pest within an area after entry.

Fellowship - A short-term award (up to 1-3 years) involving research or other evidence gathering activities, often used as a means for the recipient to obtain an academic qualification or experience and expertise for career development.

Horizon scanning - A systematic examination of information to identify potential threats, risks, emerging issues and opportunities.

Host species - Species capable, under natural conditions, of sustaining a specific pest or other organism.

Inspection - Official visual examination of plants, plant products or other regulated articles to determine if pests are present and/or to determine compliance with phytosanitary regulations.

Inspector - Person authorized by a National Plant Protection Organization to discharge its functions.

Interception (of a consignment) - The refusal or controlled entry of an imported consignment due to failure to comply with phytosanitary regulations.

Interception (of a pest) - The detection of a pest during inspection or testing of an imported consignment.

Interdisciplinary evidence - An approach to evidence gathering and research that involves a range of different disciplines working together rather than separately.

International sentinel plant network - An international network of non - native plants which can act as sentinel plants to provide an early warning system of new and emerging pest and pathogen risks.

Introduction - The entry of a pest resulting in its establishment.

ISO Accreditation - Assessment by the national accreditation body (UKAS) to demonstrate technical competence and compliance with recognised international standards.

Modelling - Constructing and manipulating a representation of a system.

Molecular [diagnostic] techniques – Typically involving detection and identification of a pest by means of specific molecular, often unique DNA or proteins.

Non-woodland trees - Trees not forming part of distinct forests or woodlands, typically in urban areas and in hedgerows or fields.

Outbreak - A recently detected pest population, including an incursion, or a sudden significant increase of an established pest population in an area.

Passenger baggage concession - A concession from the need to obtain a phytosanitary certificate for the importation of plant material when it is carried as part of accompanied passenger baggage.

Passenger channels - The red and green channels through which passengers pass on entry to the UK and in so doing confirm to Border Force if they have goods to declare.

Pathogen - Micro-organism causing disease

Pathway - Any means that allows the entry or spread of a pest

Pest - Any species, strain or biotype of plant, animal or pathogenic agent injurious to plants or plant products

Pest Free Area - 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.

Pest Risk Analysis - The process of evaluating biological or other scientific and economic evidence to determine whether an organism is a pest, whether it should be regulated, and the strength of any phytosanitary measures to be taken against it.

Phytosanitary - Relating to the health of plants, especially with respect to the requirements of international trade.

Phytosanitary certification - Use of phytosanitary procedures leading to the issue of a Phytosanitary Certificate

Plants - Living plants and parts thereof, including seeds and germplasm.

Plant products - Unmanufactured material of plant origin (including grain) and those manufactured products that, by their nature or that of their processing, may create a risk for the introduction and spread of pests.

Protected zone – A zone in the European Union in which a pest established in other parts of the Union territory, is not established despite favourable conditions for it to establish.

Quarantine pest - A pest of potential economic importance to the area endangered thereby and not yet present there, or present but not widely distributed and being officially controlled

Red Tape Challenge – The Red Tape Challenge is a government wide initiative that aims to reduce the overall burden of regulation. Through Red Tape Challenge, the government has been reviewing its regulations to understand which regulations can be repealed or improved. The resulting aim of Red Tape Challenge is to reduce unnecessary regulatory burdens on business and society.

Research Councils - UK bodies funding research in a range of areas. They include the Biotechnology and Biology Research Council (BBSRC), the Natural Environment Research Council (NERC) and the Economics and Social Research Council (ESRC)

Social sciences - Academic disciplines concerned with society which includes economics anthropology, economics, political science, psychology and sociology.

Surveillance - An official process which collects and records data on pest occurrence or absence by survey, monitoring or other procedures

Third country - A country that is not a member of the European Union.