

TABLING OF THE PLANT HEALTH POLICY AND IMPLEMENTATION PLAN

1.0 Purpose

1.1 Tabling of the Plant Health Policy and Implementation Plan as a White Paper. This Policy was approved on 17th March 2014 by way of Cabinet decision #8/14.

2.0 Background

2.1 The National Plant Health Policy was approved by way of Cabinet Decision No. 26/10 dated 12 July 2010. The Policy identified gaps and failures in the current plant health system in light of requirements of international treaties and agreements. Gaps relating to food safety and phytosanitary standards of Jamaica's major trading partners were also highlighted in the policy.

2.2 The task of protecting Jamaican agriculture is becoming increasingly challenging, as natural and national borders that once were effective barriers to the spread and introduction of unwanted organisms or materials are now under pressure from the volumes of international traffic. Continental countries with land borders have always experienced difficulties in monitoring and controlling the movement of pests across their borders. Island nations are no longer protected by their surrounding oceans, as the volumes and speed of modern air and shipping traffic breach their natural defences against pest introduction. These challenges are also compounded by limited financial and human resources to safeguard these borders against unwanted pest introduction.

The functions of Jamaica's plant health system is shared among three (3) Divisions/ Agencies that fall within the purview of the Ministry of Agriculture & Fisheries. These are:

- Plant Quarantine/Produce Inspection Unit;

- Plant Protection Unit/ Post Entry Quarantine of the Research and Development Division; and
- Rural Agricultural Development Authority (RADA).

2.3 It should be noted, that The Agreement on Sanitary and Phytosanitary measures entered into force with the establishment of the World Trade Organisation on January 1, 1995. The Agreement provides a multilateral framework of rules and disciplines to guide the development, adoption and enforcement of sanitary and phytosanitary measures in order to minimize their effects on trade. It applies to all sanitary and phytosanitary measures that may, directly and indirectly affect international trade. The Agreement sets out the basic rules for food safety and animal and plant health standards and allows countries to set their own standards.

3.0 Highlights of the National Plant Health Policy

3.1 The policy addresses the following issues:

- Revision of existing legislation;
- Building of institutional capacity;
- Enhancement of scientific systems;
- Improvement of quarantine capacity;
- Enhancement of surveillance systems
- Improvement of emergency response system for pest outbreaks; and
- Increased public awareness.

3.2 The vision of the policy is:

“The establishment of a coordinated, sustainable and international compliant plant health system that enhances Jamaica’s plant health status, thus fostering consumer, plant and environmental health and food security”.

Attached please see copy of the National Plant Health Policy and Implementation Plan (Appendix I).

3.3 The goals of the policy are to:

- Improve the current plant health system in accordance with international standards and obligations;
- Harmonize national plant health legislative, regulatory and institutional frameworks;
- Facilitate the development of systems that mitigate the introduction and spread of harmful alien pest species;
- Promote the use of sustainable integrated pest management strategies in order to reduce the dependence on pesticides by farmers;
- Protect the natural environment from the harmful impact of invasive plant pests; and
- Increase public awareness and role of stakeholders in protecting plant health.

3.4 **Recommendations detailed in the policy include:**

- Establishment of a National Plant Health Board to provide advice to the Minister responsible for Agriculture on all matters related to plant health in the country;
- Designation of the Plant Quarantine/Produce Inspection Unit as the National Plant Protection Organization for Jamaica;
- Update the Plant Quarantine Act (1993) to designate the Plant Quarantine/Produce Inspection Unit to give authority to the Plant Protection Unit, Rural Development Authority and Customs Department to provide complementary support in carrying out of its functions.
- Modernization of the diagnostic laboratories in the Plant Protection Unit (Ministry of Agriculture & Fisheries) with adequate equipment and facilities critical for rapid and timely pest identification;
- Establishment of an efficient coordinated system of surveillance for the consistent and frequent collection and monitoring of information on pests;
- Promoting the use of integrated pest management techniques to farmers and provide continuous training;

- Strengthening of collaborative arrangements with the agencies responsible for plant protection, and the appropriate research institutions and commodity boards, to provide adequate and timely scientific support for phytosanitary concerns, capacity building, cooperative research and funding efforts;
- Finalization of the Emergency Action Plan for exotic plant pests and diseases that details actions to be taken in the event of a pest or disease outbreak;
- Increase public awareness about the impacts of illegal importation of plants and fresh fruit and the proper avenues for importation of these items;

4.0 Implementation Plan/Strategy

4.1 The National Plant Health Policy Implementation Plan will provide the road map to achieving the objectives of the Policy thus improving Jamaica's Plant Health. In addition, the Implementation Plan will make provision for the revision of existing legislation, building of institutional capacity, scientific systems, quarantine capacity, surveillance systems, emergency response for pest outbreaks and increased public awareness.

4.2 The Implementation Plan:

- Identifies all the activities to be undertaken in achieving each policy objective;
- Identifies the roles and responsibilities of the various Agencies involved in the process to prevent duplication of efforts;
- Identifies gaps, limitations and interrelated activities which may impact the successful implementation of the policy;
- Develops specific timelines, performance indicators and funding requirement; and
- Provides for the monitoring and evaluation of the policy implementation.

5.0 Governance Framework

5.1 In order to facilitate the implementation of the Policy, the Government will designate the Plant Quarantine/Produce Inspection Unit as the National Plant Protection Organization for Jamaica, with complementary plant health services provided by RADA, Plant Protection Unit

and Customs Department. Government will also establish a National Plant Health Board to provide advice to the Minister responsible for Agriculture and to the new formally instituted NPPO on all matters related to plant health in the country.

The existing National Plant Health Coordinating Committee will serve as the technical advisory committee to the National Plant Health Board.

6.0 Financing of the Implementation Plan

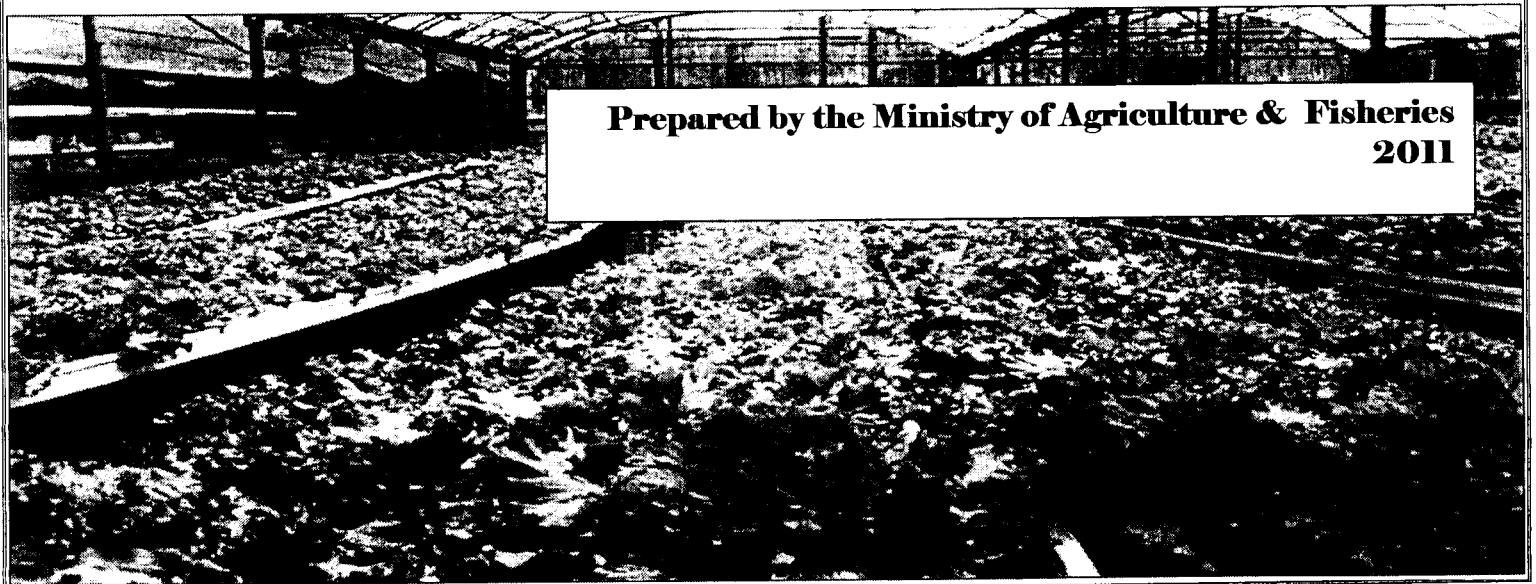
6.1 It should be noted that the indicative cost of implementing the Plan is \$750.090M and will be financed through budgetary support from the line Ministries and their respective agencies; financing of specific activities by the Cabinet Office; through allocation of funds under Component 2 of the ACP which provides support for the improvement of an integrated, efficient and sustained Agricultural Health and Food Safety system and; additionally, by leveraging international funding, from donor agencies, through development projects.

A handwritten signature in black ink, appearing to read 'R. Clarke', written over a horizontal line.

Roger Clarke
Minister of Agriculture and Fisheries
April 16, 2014



NATIONAL PLANT HEALTH POLICY



**Prepared by the Ministry of Agriculture & Fisheries
2011**

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LIST OF ACRONYMS

IPPC	International Plant Protection Convention
WTO	World Trade Organization
PCA	Pesticide Control Authority
NEPA	National Environment and Planning Agency
NPPO	National Plant Protection Organization
PPU	Plant Protection Unit
RADA	Rural Agricultural Development Authority
PQ/PI	Plant Quarantine/ Produce Inspection Unit
UWI	University of the West Indies
SIRI	Sugar Industry Research Institute
JCPA	Jamaica Citrus Protection Agency
CARDI	Caribbean Agricultural Research and Development Institute
WTO-SPS	World Trade Organization Agreement on Sanitary and Phytosanitary Measures
ISPMs	International Standards for Phytosanitary Measures
CBD	Convention on Biological Diversity
PRA	Pest Risk Analysis
NEPPC	National Emergency Plant Pest Committee
FAO	Food and Agricultural Organization
IICA	Inter-American Institute for Cooperation on Agriculture

EXECUTIVE SUMMARY

The task of protecting Jamaican agriculture is becoming increasingly challenging, as natural and national borders that once were effective barriers to the spread and introduction of unwanted organisms or materials are now under pressure from the volumes of international traffic. Continental countries with land borders have always experienced difficulties in monitoring and controlling the movement of pests across their borders. Island nations are no longer protected by their surrounding oceans, as the volumes and speed of modern air and shipping traffic breach their natural defences against pest introduction. These challenges are also compounded by limited financial and human resources to safeguard these borders against unwanted pest introductions.

In addition, the intensification of production systems based on exotic species and climatic and environmental changes have all increased the risks of introducing harmful alien species. This poses increasing difficulties for phytosanitary authorities. In their day-to-day operation, phytosanitary authorities now face many demands such as assessment of pest risk, evaluation of control measures and planning for emergency responses to pest outbreaks.

The impact of pests and unwanted species are widespread and have a negative effect the environment, economy and society in general. Some of these pests have the capacity to cause damage to the natural environment and agricultural crops. Economic costs of pest eradication and long term pest control options are normally borne by taxpayers, farmers and ultimately, consumers. The application of pesticides to control unwanted pests leads to damage of the ecosystem, higher costs of production and negative effects on human health and nutrition.

Political and social impacts associated with regulated pests include the hampering of sustainable development opportunities as pest infestations and outbreaks negatively affect food security and rural stability. Pest outbreaks can impact negatively on small farmer incomes and lead to the deepening of poverty in rural areas due to the destruction of livelihoods.

Jamaica's plant health system is governed by the National Plant Protection Organisation (NPPO). The NPPO's functions are shared among three (3) Divisions/ Agencies that fall within the purview of the Ministry of Agriculture & Fisheries. These are:

- Plant Quarantine/Produce Inspection Unit;
- Plant Protection Unit/ Post Entry Quarantine of the Research and Development Division; and
- Rural Agricultural Development Authority (RADA).

Jamaica currently has four pieces of legislation that directly address plant health, namely:

- Plant Quarantine Act 1993 and Regulations 1999 and 2005;
- Pesticide Act (1975) and Regulations (1996, 1999 and 2004);
- Natural Resource Conservation Act (1991); and

- The Forest Act (1995).

Despite the existence of able institutions and legislation, these are inadequate to meet the requirements of international agreements or conventions to which Jamaica is signatory or adheres. These include World Trade Organization (which includes the Agreement on Sanitary and Phytosanitary Measures) and the Convention on Biological Diversity and adheres to the International Plant Protection Convention (IPPC).

The policy therefore seeks to address the gaps and failures in the current plant health system in light of requirements of international treaties and agreements and food safety and phytosanitary standards of our major trading partners. The policy identifies issues faced by Government that hinder the development of an efficient plant health system. The policy will therefore make provision for the revision of existing legislation, building of institutional capacity, scientific systems, quarantine capacity, surveillance systems, emergency response for pest outbreaks and increased public awareness.

The vision of the policy is *“the establishment of a coordinated, sustainable and international compliant plant health system that enhances Jamaica’s plant health status, thus fostering consumer, plant and environmental health and food security”*.

General goals of the plant health policy are to:

- ❖ Improve the current plant health system in accordance with international standards and obligations;
- ❖ Harmonize national plant health legislative, regulatory and institutional frameworks;
- ❖ Facilitate the development of systems that mitigate the introduction and spread of harmful alien pest species;
- ❖ Promote the use of sustainable integrated pest management strategies in order to reduce the dependence on pesticides by farmers;
- ❖ Protect the natural environment from the harmful impact of invasive plant pests; and
- ❖ Increase public awareness and role of stakeholders in protecting plant health.

The Ministry of Agriculture & Fisheries will be the main institution responsible for implementation of this policy, as the NPPO (Plant Quarantine/Produce Inspection Unit) and its complementary Agencies/Divisions, RADA and Plant Protection Unit falls within its purview. Other Agencies such as the Pesticides Control Authority and Jamaica Bureau of Standards will also play key roles in the implementation of this policy.

The Policy will be monitored by the Planning and Policy Division of the Ministry of Agriculture & Fisheries through benchmarks that will be established in a 3 year Implementation Plan for the policy.

1. Background

The discipline of plant health is wide in scope. It however consistently deals with a diversity of biotic agents potentially harmful to plants. Plant health management is the science and practice of comprehending and prevailing against those biotic and abiotic factors that limit plants from realizing their genetic potential. Plant health is becoming more progressively important because of the enhanced risk of the introduction and spread of harmful biotic agents due to increased international trade and travel. It is with these risks that plant health and quarantine are largely concerned. Hence much of the science and applications of plant health is focused on preventing or mitigating the spread and establishment of plant pests into new areas and to eradicate and control them if this happens. For the scope of this policy, plant health entails the application of scientific knowledge, logic and innovation to administrative and regulatory systems for achieving a good standard of health in plants, including cultivated and uncultivated, unmanaged plants, wild flora, habitats and ecosystems (Ebbels, 2003).

A plant pest as defined by the International Plant Protection Convention (IPPC) as any species, strain, or biotype of plant, animal or pathogenic agent, injurious to plants or plant products. Pests can destroy crops and reduce farm incomes, but generally pose no direct risk to humans or animals. However, there are exceptions such as the Giant African Snail (*Achatina fulica*) which provides an intermediate host for rat lungworm (*Angiostrongylus cationensis*) which can infect the human brain, causing paralysis, coma and could even lead to death.

Two categories of plant pests are directly subject to regulation, quarantine pests and regulated non-quarantine pests. Quarantine pests are pests of potential economic or environmental importance to an area, which are not present there, i.e. alien, or which if present are not widespread and are being officially controlled. Some pests, referred to as regulated non-quarantine pests, are widely established and therefore do not qualify as quarantine pests. These pests are nevertheless prohibited or only permitted within a certain level of tolerance on planting material.

The task of protecting Jamaican agriculture is becoming increasingly challenging, as natural and national borders that once were effective barriers to the spread and introduction of unwanted organisms or materials are now under pressure from the volumes of international traffic. Continental countries with land borders have always experienced difficulties in monitoring and controlling the movement of pests across their borders. Island nations are no longer protected by their surrounding oceans, as the volumes and speed of modern air and shipping traffic breach their natural defences against pest introduction. These challenges are also compounded by limited financial and human resources to safeguard these borders against unwanted pest introductions.

In addition, the intensification of production systems based on exotic species and climatic and environmental changes have all increased the risks of introducing harmful alien species. This poses increasing difficulties for phytosanitary authorities. In their day-to-

day operation, phytosanitary authorities now face many demands such as assessment of pest risk, evaluation of control measures and planning for emergency responses to pest outbreaks.

Alien species do not necessarily create undesirable risks as the majority of plant species used in agriculture or horticulture are alien species. In fact, evidence suggests that only a very small proportion of all alien species ever become a pest in a new territory. However, the proportions that do become pests have major economic, environmental and political implications for the country or countries concerned.

Plant pests are introduced or spread through pathways. Introductions can be intentional or unintentional, as well as authorized or unauthorized. There are a number of pathways that pests can be introduced to a country. These include commercial and casual imports of plants and plant products, packaging material, persons, baggage, mail, conveyances, aircrafts, ships, etc. Therefore, international travel, movement of people and goods always carry the risk of unwanted pest introductions in countries. These are not detectable in most instances and may become pests long after their introduction.

The table below summarizes some sources of plant pest introduction, its consequences and the agents that are likely to be affected¹.

Table 1: Causes and Consequences of Plant Pests and Invasive Alien Species

Sources of Introduction	Potential Effects On Ecosystem	Agents Affected
<ul style="list-style-type: none"> • Commercial Importers (e.g. of nursery stock, cut flowers) • Casual Importers (tourists, military personnel and travellers) • Adventitious Carriers (e.g. aircrafts and ships) 	<ul style="list-style-type: none"> • Agricultural losses • Destruction of biodiversity and ecosystems • Climate changes • Changes in the hydrological cycle • Landscape destruction • Community disruption • Recreation losses 	<ul style="list-style-type: none"> • Exporters • Importers • Growers • Farmers • Consumers • Society in general

Source: IPPC Secretariat 2005

Countries are always at risk of being affected by the introduction of unwanted organisms or pests. Government therefore has an important role to play in the protection of a country's plant health because of the potential negative impact on the agricultural sector and environment. The importance of an efficient plant health system is therefore vital to the expansion and sustainability of the agricultural sector.

¹ IPPC Secretariat 2005. *Identification of risks and management of invasive alien species using the IPPC framework*. Proceedings of the workshop on invasive alien species and the International Plant Protection Convention Braunschweig Germany 22-26 September 2003 Rome Italy, FAO.

2.0 Rationale for Plant Health Policy

The impact of pests and unwanted species are widespread and affect the environment, economy and society in general. Some of these pests have the capacity to directly damage the natural environment and agricultural crops. Economic costs of pest eradication and long term pest control options are normally borne by taxpayers, farmers and ultimately, consumers. Such costs could negatively impact on the availability and international competitiveness of Jamaican agricultural commodities. Rural communities are also adversely impacted due to loss of earnings from lower yields or destruction of crops due to pests.

In Jamaica, the Moko disease resulted in the destruction of large acreages of bananas and a decrease in export earnings for this sub-sector in the 1990's. Similarly the lethal yellowing disease was quite devastating to the coconut industry as many trees had to be destroyed, which negatively impacted on the income of farmers. Recent introductions such as the pink hibiscus mealybug (*Maconellicoccus hirsutus*) and the red palm mite (*Raoiella indica*) have warranted considerable resource allocation from Government for their official control. Pink Mealybug infestations have also destroyed agricultural crops and also resulted in loss of incomes for farmers.

The application of pesticides to control unwanted pests leads to damage of the ecosystem, higher costs of production and negative effects on human health and nutrition. The overall socio-economic conditions of rural communities can be negatively impacted, thus warranting the development or adoption of more sustainable management strategies.

Biodiversity of the country is also negatively affected, as pests that become invasive can lead to species extinction, disruption of habitats, and loss of genetic information used to boost agricultural productivity, impart resistance to pests and help adapt plants to harsh environments. Pests and unwanted species also have a negative impact on soils with respect to changes in waste assimilation, nutrient cycling, conservation and regeneration.

Political and social impacts associated with regulated pests include the hampering of sustainable development opportunities as pest infestations and outbreaks negatively affect food security and rural stability. Pest outbreaks can impact negatively on small farmer incomes and lead to the deepening of poverty in rural areas due to the destruction of livelihoods.

Jamaica's major trading partners are now demanding that the country meet food safety and phytosanitary standards in their markets. These standards are being used to limit access to these markets for fresh and processed agricultural exports. Increased emphasis on phytosanitary requirements in major export markets means that international trade and economic growth can also be affected if these countries prevent domestic exporters from selling some types of plant products.

The rationale for Government intervention in plant health therefore relates to issues of market failure and equity. Market failure in plant and produce health markets may occur because of the presence of environmental externalities and/or imperfect information. The pathways through which pests can be introduced are diverse and sometimes undetectable and eventually, negatively impacts on the physical environment. Losses are incurred by farmers, exporters, consumers and society in general when there is a pest outbreak.

The market for plant health also does not take into account the external environmental benefits that a higher level of plant health would ensure. Crop loss and pesticide use would be reduced and consumers would benefit from increased quantities and lower priced agricultural commodities and society in general would benefit from a healthier ecosystem. Plant health is therefore a public good and can be regarded as a positive externality. Government intervention is therefore necessary in this area to mitigate against negative impacts of pests.

Jamaica is also signatory to the World Trade Organization (which includes the Agreement on Sanitary and Phytosanitary Measures) and the Convention on Biological Diversity and adheres to the International Plant Protection Convention (IPPC). These speak to the responsibilities for which the Government is obligated and the national capacities that should be in place for the country to meet the obligations and fully realize the benefits under the agreements.

Despite Government's role in ensuring an efficient plant health system, it should be recognized that protection of plant health is a shared responsibility that is to be also undertaken by growers, traders and the general public. All these groups play a critical role in maintaining the plant health system of a country, as their activities impact upon and depend on it.

3.0 Delivery of Plant Health Services

3.1 Legislative Framework

Jamaica currently has four pieces of legislation that directly address plant health. These are:

- Plant Quarantine Act (1993) and Regulations (1999 and 2005);
- Pesticide Act (1975) and Regulations (1996, 1999 and 2004);
- Natural Resource Conservation Act (1991); and
- The Forest Act (1995).

Plant Quarantine Act (1993) and Regulations 1999 and 2005

The Act makes provision for the effective control of the importation of plants, plant products and articles which pose a threat of introduction to Jamaica, any injurious plant pest, as well as the course of action to be taken when these are discovered within the island. The Act contains two regulations, namely, The Plants (Importation) Control (Amendment) Regulations, 2005 and Citrus Plant (Certification) Regulation (1999).

The Plants (Importation) Control (Amendment) Regulations, 2005 gives information on the processes involved in acquiring an import permit, fines for breaches and the conditions attached to the importation of specific items.

The Citrus Plant (Certification) Regulation establishes the Jamaica Citrus Protection Agency as the body responsible for the implementation of the country's mandatory citrus certification programme. The Regulation also sets out the guidelines for: registration of nurseries that produce citrus plants; certification of seed source trees; certification of scion trees whose material is used to propagate citrus plants; trees used for quick multiplication blocks; certification of citrus trees produced by nurseries; and criteria for identification and use of varietal block trees.

The Act also contains four Orders declaring notifiable pests. These are:

- Pawpaw Ringspot Order, 1994;
- Pink Hibiscus Mealybug Order, 1996 and 2007; and
- Plant Quarantine (Control of *Ralstonia Solanacearum* Bacterium) Plant Pest, 2004.

Pesticide Act (1975) and Regulations (1996, 1999 and 2004)

The Act and its Regulations regulates the registration, importation, storage, retailing and manufacturing of pesticide formulations. The Act also establishes the Pesticides Control Authority which has responsibility for registering pesticides; licensing persons to import or manufacture registered pesticides; authorizing persons to sell restricted pesticides; registering premises in which a restricted pesticide may be sold; licensing pest control

operators. The Act also addresses all aspects of the importation, manufacture, packaging, preparation for sale, sale, disposal and use of pesticides.

Natural Resource Conservation Act (1991)

The Natural Resources Conservation Authority Act 1991 provides for the management, conservation and protection of the natural resources of Jamaica through the National Environment and Planning Agency (NEPA) whose responsibilities include the effective management of the physical environment of Jamaica and the management of marine parks and protected areas. The Act also addresses sewage and trade effluent discharges as well as air emissions.

The Forest Act (1995)

The 1995 Forest Act addresses the sustainable management of forests on lands in the possession of the Crown and vests management responsibility in the Conservator of Forests. The Act provides for the: establishment of forests reserves; establishment of protected areas; promotion of forestry research areas; reforestation initiatives and the preparation of a forestry management plan.

3.2 Institutional Framework

The functions of Jamaica's National Plant Protection Organisation (NPPO) are shared among three (3) agencies that fall within the purview of the Ministry of Agriculture & Fisheries. These are:

- Plant Quarantine/Produce Inspection Unit- Ministry of Agriculture & Fisheries;
- Plant Protection Unit/ Post Entry Quarantine - Research and Development Division- Ministry of Agriculture & Fisheries; and
- Rural Agricultural Development Authority (RADA).

Other organisations (see table 2 below) carry out plant health related activities, but do not form part of the NPPO. The following table gives a summary of the functions of institutions that undertake plant health related programmes in Jamaica.

Table 2: Functions of Agencies Involved In the Delivery of Plant Health

Institutions	Functions /Programmes
<i>Governmental Organizations</i>	
Plant Protection Unit, Research and Development Division of the Ministry of Agriculture & Fisheries	<ul style="list-style-type: none"> • Contributes to improved efficiency, productivity and enhanced competitiveness of plant commodities through development of cost effective and environmentally friendly technologies for the management of pest and disease outbreaks, inclusive of honeybee pests. This technology is then transferred to farmers through extension. • Provides improved and relevant pest and disease diagnostic capabilities to stakeholders. • Supports the activities of Plant Quarantine by maintaining an updated pest register and determines status for plant quarantine purposes.
Plant Quarantine/Produce Inspection Unit- Ministry of Agriculture & Fisheries	<ul style="list-style-type: none"> • Ensures that the highest quality, pest free produce is imported or exported into/from Jamaica. The unit is also mandated to ensure that no harmful exotic pest is introduced into the country and becomes established.
Post Entry Quarantine Unit- Research and Development Division of the Ministry of Agriculture & Fisheries	<ul style="list-style-type: none"> • Currently provides serological testing and bio-indexing of citrus bud wood material as a part of the Citrus certification programme. • The unit is also mandated to provide rigorous monitoring of imported plant material and validation of phytosanitary clearances issued by exporting countries for plant and plant parts.
Rural Agricultural Development Authority (RADA)- Ministry of Agriculture & Fisheries	<ul style="list-style-type: none"> • Provides sustainable and environmentally safe crop management advice to farmers inclusive of pest management. • Transfers Integrated Pest Management (IPM) packages generated by research to the farmers within the framework of a larger integrated crop management programme. • Instructs farmers on the safe and efficient use of pesticides. • Reports new plant protection problems so that new control strategies can be developed. • Reports new pests to the Plant Quarantine and Plant Protection Unit for further investigation.
Pesticides Control Authority (PCA)- Ministry of Health	<ul style="list-style-type: none"> • Ensures safe use and management of pesticides. • Provides registration and import licences to manufactures and sellers of pesticides. • Educates the public on public health and food safety issues concerning pesticide use.
<i>Commodity Boards/Groups</i>	
Sugar Industry Research Institute (SIRI)	<ul style="list-style-type: none"> • Monitors diseases, insects and weeds affecting sugarcane production and devises mechanism for their control.
Coffee Board	<ul style="list-style-type: none"> • Maintains a level of pest and disease at a manageable level (0.5% threshold) through monitoring, grower training and contracting research to develop appropriate pest management strategies.
Banana Board	<ul style="list-style-type: none"> • Research primarily deals with management of banana pests and diseases that negatively impact local banana

Institutions	Functions /Programmes
	production.
Coconut Board	<ul style="list-style-type: none"> Provides coconut material with resistance and high stable yield. Addresses the management of existing pest and disease problems through research and development of IPM systems. Uses proactive approach to prevent and minimize the spread of exotic pests and disease agents into coconut growing areas.
<i>Academic Institutions</i>	
UWI- Pure and Applied Sciences	<ul style="list-style-type: none"> Provides academic training and conducts research in the areas of arthropod biology and ecology, botanical pesticides and pesticide management.
UWI Biotechnology Centre	<ul style="list-style-type: none"> Uses modern research tools (e.g. molecular tools in research) to generate information on some agricultural pests and also to develop plants with novel traits with greater degrees of resistance to plant pests.
<i>Regional Agricultural Research and Development</i>	
Caribbean Agricultural Research and Development Institute	<ul style="list-style-type: none"> More relevant production and marketing systems- research and development and extension coordination via networking mechanisms. Modernisation of regional market information and other support services- Regional provision of market support services, including a market information and intelligence service. Integrated pest management of agricultural arthropod pests of commodities.
<i>Other Organizations</i>	
Jamaica Citrus Protection Agency	<ul style="list-style-type: none"> Committed to implementing a mandatory citrus certification programme. Ensures that farmers and the general public get clean citrus material.

Plant health services provided by these institutions include quarantine, pest/disease diagnosis, pesticide regulation, pest management, surveillance and research. The following table shows the organisations and the plant health service provided.

Table 3: Organizations Providing Plant Health Services in Jamaica

Organisation	Pest/ Disease Diagnosis	Quarantine	Pesticide Regulation	Pest Management	Surveillance	Research
Government Organisations						
RADA	■			■	■	
MOA- PPU	■	■*		■	■	■
MOA- PQ/PI	■	■			■	
PCA			■			
NEPA**			■			
Commodity Boards/Groups						
SIRI	■			■	■	■
Coffee Board	■			■	■	■

Organisation	Pest/ Disease Diagnosis	Quarantine	Pesticide Regulation	Pest Management	Surveillance	Research
Banana Board	■			■	■	■
Coconut Board	■			■	■	■
JCPA	■			■	■	
Academic/Research Institutions						
UWI	■			■		■
Regional Agricultural Research Institutions						
CARDI				■		■

* Services provided through post entry quarantine.

** NEPA's role in pesticide regulation relates to the importation of biological control agents as biopesticides.

4.0 International Agreements and Treaties Governing Plant Health

4.1 World Trade Organisation Agreement on Sanitary and Phytosanitary Measures (WTO-SPS)

The Agreement on Sanitary and Phytosanitary measures entered into force with the establishment of the World Trade Organisation on January 1, 1995. The Agreement provides a multilateral framework of rules and disciplines to guide the development, adoption and enforcement of sanitary and phytosanitary measures in order to minimize their effects on trade. It applies to all sanitary and phytosanitary measures that may, directly and indirectly affect international trade.

The Agreement sets out the basic rules for food safety and animal and plant health standards and allows countries to set their own standards. However, regulations must be based on scientific principles and applied only to the extent necessary to protect human, animal and plant life or health. These measures should not arbitrarily or unjustifiably discriminate between countries where identical or similar conditions prevail or misused for protectionist purposes. Therefore these measures should not be used to create barriers to free trade, but only imposed to protect human, animal or plant health on the basis of scientific information.

Jamaica is a signatory of the WTO.

4.2 International Plant Protection Convention

The International Plant Protection Convention (IPPC) is an international treaty relating to plant health. The purpose of the Convention is to secure common and effective action to prevent the spread and introduction of pest of plants and plant products and promote appropriate measures for their control. Its application is much wider than the protection of cultivated plants. The Convention extends to the protection of natural flora and plant products. It includes both direct and indirect damage by pests (including weeds). The provisions extend to cover conveyances, containers, storage places, soil and other objects or material capable of harbouring plant pests.

Application of phytosanitary measures should be based on the following principles:

- **Necessity-** Restrictive measures must be applied only when necessary.
- **Technical Justification-** Measures must be technically justified.
- **Transparency-** Measures must be published and rationale made available to contracting parties.
- **Minimal impact –**Measures must not be an impediment to international movement of people, commodities and conveyances.
- **Non-discrimination-** Measures must be applied without discrimination between countries of similar phytosanitary status.

The IPPC provides a framework and forum for international cooperation, harmonization and technical exchange between contracting parties dedicated to these goals. Its implementation involves the collaboration of national plant protection organisations which are the official services established by Governments to discharge the functions specified by IPPC and regional plant protection agencies. These organizations may function as coordinating bodies on a regional level for participation in the activities to achieve the objectives of IPPC.

One of the most important activities of the IPPC is the establishment of International Standards for Phytosanitary Measures (ISPMs). ISPMs provide countries with a basis for their national phytosanitary measures. Harmonization of measures at the regional and international levels will substantially reduce the burden of countries to justify their own measures and to meet the measures of their trade partners. Jamaica is not bound by IPPC Standards, but adheres to them.

4.3 Convention on Biological Diversity (CBD)

The CBD is the foremost international convention obliging its contracting parties to take action on invasive alien species and was adopted in 1992. The convention speaks to the conservation and sustainable use of biological diversity and the fair and equitable sharing of benefits arising out of the utilization of genetic resources. Article (8h) of the CBD requires contracting parties to prevent the introduction of, control or eradicate those alien species which threaten ecosystems, habitats or systems.

In order to assist Governments in meeting their obligations, two protocols have been established under the CBD, namely, the *Cartagena Protocol on Biosafety* and the *Guiding Principles for the Prevention, Introduction and Mitigation of Impacts of Alien Species*. Both protocols have far reaching implications with consequences for plant health services. An alien species that is a plant pest (such as a pathogen or an invasive weed) and threatens ecosystems, habitats or species would be considered a quarantine pest under the IPPC, as also would a living modified organism which is a plant pest threatening biodiversity. Neither the IPPC nor the CBD takes precedence over the other, and there is an obligation on contracting parties to respect both conventions.

This warrants close linkages between plant health services and environmental agencies to ensure that duplication is avoided and scarce resources are efficiently utilized.

Jamaica is a signatory of the CBD.

5.0 Scope of Policy

The policy seeks to address the gaps and failures in the current plant health system in light of requirements of international treaties and agreements of which Jamaica is signatory and food safety and phytosanitary standards of our major trading partners. The policy identifies issues faced by Government that hinder the development of an efficient plant health system. The policy will therefore make provision for:

- revision of existing legislation;
- building of institutional capacity;
- enhancement of scientific systems;
- improvement of quarantine capacity;
- enhancement of surveillance systems
- improvement of emergency response system for pest outbreaks; and
- increased public awareness.

6.0 Vision and Policy Goals

6.1 Vision

The establishment of a coordinated, sustainable and international compliant plant health system that enhances Jamaica's plant health status, thus fostering consumer, plant and environmental health and food security.

6.2 Policy Goals

General goals of the plant health policy are to:

- ❖ Improve the current plant health system in accordance with international standards and obligations;
- ❖ Harmonize national plant health legislative, regulatory and institutional frameworks;
- ❖ Facilitate the development of systems that mitigate the introduction and spread of harmful alien pest species;
- ❖ Promote the use of sustainable integrated pest management strategies in order to reduce the dependence on pesticides by farmers;
- ❖ Protect the natural environment from the harmful impact of invasive plant pests; and
- ❖ Increase public awareness and role of stakeholders in protecting plant health.

7.0 Policy Issues and Recommendations

7.1 Institutional Issues

7.1.1 Structure and Administrative Arrangements

Currently, none of the entities that constitute a NPPO has been assigned the role of directing and coordinating overall state efforts for plant health matters. In the present situation where there is an inter-agency approach, there is a pressing need for clearly defined roles, responsibilities and linkages in order to minimize duplication of efforts and waste of scarce resources among agencies in the plant health system. This has implications for a country's timely response to exotic pest incursions that threaten not only its trading ability, but the livelihood of its people.

Existing reporting arrangements among agencies involved in plant health are informal and unclear. There is no established system of sharing information among the various organisations that form part of the plant health system. However, this is critical as one Agency's output is typically another's input. Therefore outputs generated by one Agency will assist another to effectively carry out their function. This systemic failure is compounded by the fact that Agencies are not mandated to share information or provide periodic reports within the NPPO. This results in delays in reporting pest incursions or outbreaks and hinders timely response to mobilise the needed resources for proper management of the situation. These issues impact negatively on local stakeholders and the country's trade.

In 2004, a multi-agency National Plant Health Coordinating Committee (PHCC) was formed to harmonize all plant health activities across relevant agencies to minimize inter-agency overlap. This committee is a subcommittee of the National Agricultural Health and Food Safety Committee and its operations is funded by the Agriculture Support Services Project (ASSP).

The PHCC is very important in the governance of the plant health system. In this regard, it oversees and participated in the development of Jamaica's plant health surveillance and pest response system which is supported by a web-based database; currently manages the implementation of Jamaica's emergency pest response programme for the current pink hibiscus mealybug and red palm mite introductions and oversees the development of this Plant Health Policy. However, the PHCC is considered an ad hoc committee whose future is uncertain once the ASSP ceases to function.

Policy Recommendations

- Government will designate the Plant Quarantine/Produce Inspection Unit as the National Plant Protection Organization for Jamaica, given that the majority of its functions are pertinent to the administering of the basic measures mandated of a NPPO under the IPPC Article IV. Government will also mandate RADA, Plant Protection Unit and Customs Department to provide complementary plant health services to the NPPO.
- Government will streamline the national efforts on plant health matters by providing RADA, PPU and PQ/PI with clearly defined mandates to avoid overlap and duplication of functions.
- Government will establish a National Plant Health Board to provide advice to the Minister responsible for Agriculture and a new formally instituted NPPO on all matters related to plant health in the country. The Board shall be responsible for:
 - Fostering effective and harmonized plant health programmes;
 - Acting as an information clearinghouse on plant health and regulatory matters;
 - Providing for a discussion of principles, policies and methods used in the plant health system;
 - Making recommendations to the NPPO and related agencies for the promotion of efficiency, harmony and uniformity among themselves on plant health and regulatory issues.
 - Collaborating and communicating effectively with public and private agencies and organizations on plant health and regulatory issues.
 - Suggesting and preparing regulations, orders, schedules and notices to be issued or amended under the Plant Quarantine Act 1993;
 - Assisting in the determination of criteria for the declaration of a phytosanitary emergency.
- The Board will consist of public and private sector organizations which should include the Ministry of Agriculture & Fisheries, RADA, NEPA, a tertiary institution, Commodity Boards, Ministry of Foreign Affairs and Foreign Trade, Jamaica Citrus Protection Agency, Pesticide Control Authority, the Jamaica Constabulary Force, Port Authority, Jamaica Customs Department, an importer, an exporter, a farmer and a nursery owner.

- Government shall designate the existing National Plant Health Coordinating Committee to serve as the technical committee to the National Health Plant Board to provide advice and technical input on plant health matters.

7.1.2 Funding

Over the last 15 years the funds allocated to Government agencies responsible for the provision and delivery of plant health services have been insufficient to adequately carry out their mandates. Salaries generally account for approximately 80% of the budget, leaving only 20% for the essential items, such as the procurement of equipment, maintenance of facilities, staff training and improvement of infrastructure.

These agencies are also faced with an increasing work load, in addition to participating in emergency response for pest and disease response outbreaks. These agencies are also required to fulfil responsibilities to international agencies that are critical to Jamaica's expansion of trade in agricultural products.

Poor remuneration also serves as a disincentive for attracting trained and qualified individuals, and qualified staff become demoralised and move on to higher paying jobs.

Other areas that are inadequately funded are attendance at conferences and high level meetings which are dependent on the availability of funding, especially from donor agencies. IICA has now terminated its financial support for CARICOM participants at the WTO/SPS Committee Meetings in Geneva. Representation at these meetings are important since the Committee directly influences the resolution of agricultural health standards, measures, guidelines and addresses new and emerging issues. **If there is no representation, the result would be to accept the decisions of the Committee which at times may be onerous in its undertaking and not in Jamaica's best interest.**

Policy Recommendation

- Government is currently conducting a review of RADA, Plant Quarantine/Produce Inspection Unit and Research and Development Division, with a view of examining the structure, human resource capacity, remuneration of staff and financial resources required to carry out their operations effectively and efficiently. In this regard, **Government will ensure that the restructuring of these Divisions/Agencies will result in an optimal delivery of plant health services.**
- Government will increase initiatives to improve the technical capacity of persons involved in the delivery of plant health services through training and the attendance of overseas conferences.

- Government will provide or source funding to ensure Jamaica's representation at high level meetings, to enable the country's interest to be adequately represented.

7.2 Legal Issues

- Although current legislation mandates the existence and functioning of a Plant Quarantine Unit, it does not address the existence and function of a National Plant Protection Organization (NPPO). At minimum authority is provided for the administration of phytosanitary systems and control over import-export processes related to the application of phytosanitary measures. However IPPC Article IV requires that countries should make provision for an official National Plant Protection Organization with the following responsibilities:
 - a) the issuance of certificates relating to the phytosanitary regulations of the importing contracting party for consignments of plants, plant products and other regulated articles;
 - b) the surveillance of growing plants, including both areas under cultivation (*inter alia* fields, plantations, nurseries, gardens, greenhouses and laboratories) and wild flora, and of plants and plant products in storage or in transportation, particularly with the object of reporting the occurrence, outbreak and spread of pests, and of controlling those pests;
 - c) the inspection of consignments of plants and plant products moving in international traffic and, where appropriate, the inspection of other regulated articles, particularly with the object of preventing the introduction and/or spread of pests;
 - d) the disinfestation or disinfection of consignments of plants, plant products and other regulated articles moving in international traffic, to meet phytosanitary requirements;
 - e) the protection of endangered areas and the designation, maintenance and surveillance of pest free areas and areas of low pest prevalence;
 - f) the conduct of pest risk analyses;
 - g) to ensure through appropriate procedures that the phytosanitary security of consignments after certification regarding composition, substitution and reinfestation is maintained prior to export; and
 - h) training and development of staff.

Government should designate the Plant Quarantine/Produce Inspection Unit as the National Plant Protection Organization for Jamaica, given that the majority of the aforementioned functions are administered by this Unit.

In order to provide support to the NPPO, the Plant Quarantine Act (1993) will have to be updated to give authority to the Plant Protection Unit, Rural Development Authority and Customs Department to provide complementary support in carrying out of its functions.

- There are several deficiencies in the Plant Quarantine Act (1993) and Regulations, since the Act was drafted before the WTO-SPS agreement, it does not cover elements such as the enquiry point, notification procedures, guidelines for control/eradication of pests or inspection/approval procedures, establishment of pest free areas or emergency pest response authorities.
- The Pesticides Act (1975) has three regulations (1996, 1999 and 2004). These deal with registration of all pesticides; importation and manufacture of pesticides; sale of restricted pesticides; and pest control operations which include pest control applicators or servicemen. The regulations also speak to certification of operators and applicators. However, there are no regulations that deal with the issue of pesticide residue level in crops.

Policy Recommendations

- Government will amend the Plant Quarantine Act (1993) to designate the Plant Quarantine/Produce Inspection Unit as the National Plant Protection Organization with the following responsibilities:
 - a) the issuance of certificates relating to the phytosanitary regulations of the importing contracting party for consignments of plants, plant products and other regulated articles;
 - b) the surveillance of growing plants, including both areas under cultivation (*inter alia* fields, plantations, nurseries, gardens, greenhouses and laboratories) and wild flora, and of plants and plant products in storage or in transportation, particularly with the object of reporting the occurrence, outbreak and spread of pests, and of controlling those pests;
 - c) the inspection of consignments of plants and plant products moving in international traffic and, where appropriate, the inspection of other regulated articles, particularly with the object of preventing the introduction and/or spread of pests;

- d) the disinfection or disinfection of consignments of plants, plant products and other regulated articles moving in international traffic, to meet phytosanitary requirements;
 - e) the protection of endangered areas and the designation, maintenance and surveillance of pest free areas and areas of low pest prevalence;
 - f) the conduct of pest risk analyses;
 - g) to ensure through appropriate procedures that the phytosanitary security of consignments after certification regarding composition, substitution and reinfestation is maintained prior to export; and
 - h) training and development of staff.
- Government will enact the appropriate legislation to give legal authority to the Plant Protection Unit, Rural Agricultural Development Authority and Customs Department to provide complementary plant health services to the NPPO as follows:
 - Plant Protection Unit- Provision of diagnostic services and implementation of survey and control, including emergency actions against plant pests;
 - Rural Agricultural Development Authority- Surveillance of growing plants under cultivation (*inter alia* fields, plantations, nurseries, gardens and greenhouses); and
 - Customs Department- Inspection of regulated articles at ports of entry, particularly with the object of preventing the introduction and/or spread of pests.
 - Government will enact the appropriate legislation to establish the National Plant Health Board that will be responsible for providing advice to the Minister responsible for Agriculture on all matters related to plant health in the country.
 - Government will continue to undertake a comprehensive review of the existing Plant Quarantine Act (1993) and its Regulations with a view of amending it to ensure compliance with WTO-SPS standards and IPPC guidelines. Therefore updated legislation will include the enquiry point, notification procedures, and guidelines for control/eradication of pests or inspection/approval procedures, establishment of pest free areas or emergency pest response authorities.
 - Government will continue to draft the new regulation to the Pesticides Act (1975) to prescribe maximum residue levels of pesticides on crops.

7.3 Operational Issues

7.3.1 Quarantine Capacity

Quarantine plays the pivotal role in protecting our borders from the possible entry and spread of exotic pests and invasive species. This must be supported by robust, effective and efficient inspection services to ensure compliance of imports and exports with the relevant phytosanitary specifications.

It is critical that decisions made by Quarantine be supported by scientific advice and research in pest biology, pest surveillance and pest eradication, control and remediation measures for pest risk analysis. Under the WTO-SPS Agreement, Quarantine must provide scientific justification through pest risk analysis regarding phytosanitary measures that are imposed, while exercising more rigorous monitoring and control of our borders.

Jamaica's ability to meet this requirement is challenged by inconsistent training and inadequate number of staff in appropriate disciplines. Although officers have been trained and an *ad hoc* Pest Risk Analysis (PRA) committee exists, officers are not completely dedicated to this activity.

It is recommended under the WTO-SPS agreement that a Pest Risk Analysis Unit be established and staffed with the relevant professional expertise. This will enable the country to provide scientific and technical justification for the sanitary and phytosanitary measures that are applied to imports.

Policy Recommendation

- Government will strengthen Jamaica's Plant Quarantine capacity and ensure that this area is adequately equipped and staffed with the relevant skills to adequately perform its functions.
- In this regard, Government will establish a Pest Risk Analysis Unit with a full cadre of professional staff to conduct pest risk analysis on the based on sound scientific principles and the relevant ISPMs.
- Government will develop an institutionalized training programme that will ensure highly trained staff in the various areas of plant science as a means of ensuring that the staff are adequately trained on an on-going basis. Areas for training will include Pest Risk Assessment, Private Standards (such as Global GAP – procedures and assessments), Import Regulations of Jamaica's Major Trading Partners, Pest Identification, Plant Identification, Survey and Surveillance Techniques.

- Government will ensure that actions taken against plant pests is proportionate to the risk they are considered to impose. Decisions on whether a plant pest should be quarantined, or regulated non-quarantined will be based on appropriate evidence taken in a transparent way.

7.3.2 Diagnostic Systems

A strong scientific base is critical to a good plant health system. The availability of scientifically sound and timely diagnostic services is critical and provides the basis for the design of appropriate pest management/eradication programmes. There is a need to strengthen institutional capacity to diagnose pest problems and provide timely responses to user requests. At present, there are a limited number of professionals with taxonomic expertise in critical areas such as weed science, plant virology, plant pathology, bacteriology, mycology and nematology. The discipline with the greatest number of professionals is entomology.

In addition, the upgrade and modernization of plant diagnostic laboratories with adequate equipment and facilities is critical for rapid and timely pest identification. At present, Jamaica's Plant Protection Research laboratories are equipped to perform traditional taxonomic identification which remain a critical component of diagnostics. **However, these laboratories are not equipped to perform molecular diagnostic tests, which are necessary for the changing global trade environment.** This is compounded by the fact that laboratories providing plant diagnostic services are not formally accredited. Accreditation provides a means of determining, recognizing and promoting the competence of facilities to perform specific types of testing. This allows laboratories to determine whether they are performing their work correctly and to appropriate standards, and provides them with a benchmark for maintaining that competence.

Currently laboratories operate in isolation and rarely, if ever, receive any independent technical evaluation as a measure of their performance. This process involves regular audit checks of all aspects of a facility's operations related to consistently producing accurate and dependable data. Areas for improvement are identified and discussed, and a detailed report provided at the end of each visit. Follow-up action is monitored by the accreditation body where necessary, so the facility is confident that it has taken the appropriate corrective action.

The improvement of Jamaica's diagnostic capacity is critical for accessing international markets, especially of developed countries where major exports are concentrated. If Jamaica does not have laboratories that are able to perform required tests, the country will risk loss of these markets, as it will not be able to justify to importing countries, with tests and laboratory analyses, the export phytosanitary certificates issued.

Policy Recommendation

- Government will increase the cadre of professionals in weed science, plant virology, plant pathology, bacteriology, mycology and nematology and employ professionals in the areas of plant pest and disease epidemiology.
- Government will also upgrade and modernize of the diagnostic laboratories in the Plant Protection Unit (Ministry of Agriculture & Fisheries) with adequate equipment and facilities critical for rapid and timely pest identification
- Government will ensure that the relevant laboratories are formally accredited and that all laboratories are subject to an independent audit that accredits laboratory management systems and processes or testing protocols.

7.3.3 Surveillance Systems

The International Plant Protection Convention requires countries to report on the occurrence, outbreak, and spread of pests with the purpose of communicating immediate or potential danger. NPPOs have the responsibility to collect pest information by surveillance and to verify pest records collected. Pest reports should contain information on the identity of the pest, location, pest status, and nature of the immediate or potential danger. The provision of reliable and prompt pest reports confirms the operation of effective surveillance and reporting systems within countries. An effective surveillance and monitoring service is necessary to provide scientific and technical justification for claims of pest freedom and to support emergency pest response systems.

Currently, there is no formal comprehensive system of surveillance in operation. No single organization is dedicated to plant pest survey activities for the detection, delimitation or monitoring of established pests, or the detection of new pests that may be introduced.

At present, extension officers make a monthly report on the problems affecting major crops. This report includes pest outbreak noticed, farmer practice, inclusive of pesticide use and cultural control practice. Therefore the survey methodology is qualitative in nature and may not produce useful data to researchers. Required sampling and surveillance techniques are not consistently used to conduct pest surveys and extension officers are not adequately trained to collect field data.

Pest surveys done by the Research and Development Division are limited and linked to research activities which include pests that pose threats to specific crops, new pest introductions and the updating of the pest list. In recent times, the most detailed surveys carried out have been linked to specific pest interceptions or outbreaks of pest infestations.

A Plant Health Surveillance and Pest Response System has been developed by the Ministry of Agriculture & Fisheries to coordinate the activities among the relevant agencies involved in plant health surveillance. It includes a web-based database that enables users to rapidly notify potential threats to plant health, facilitates rapid, tentative pest identification and electronic capture of surveillance and pest diagnostic information. However this system should fall under the purview of the NPPO, as the organization in the plant health system with responsibility for surveillance systems.

Policy Recommendation

- Government recognizes that surveillance and monitoring are key to sustainable plant health systems, as they provide a scientific basis and support for decisions taken. In this regard, Government will ensure that an efficient and coordinated system of surveillance is established for the consistent and frequent collection and monitoring of information on pests. Government will continue to undertake ongoing field surveillance for pests of quarantine importance that pose an immediate threat to Jamaica.
- Government will improve the capacity of extension officers to undertake general surveillance activities through training and development of improved methodologies.
- Government will broaden Research and Development Division's pest surveillance activities to incorporate information gathering on the geographic distribution of economic pest organisms, development of surveillance protocols to underpin surveillance activities and satisfy the declaration of pest free areas and areas of low pest prevalence for quarantine and regulated non-quarantine pests.
- Government will increase surveillance activities at the ports through inspection of containers, parcels, baggage, ships and aircrafts, of entry to prevent illegal importation of plant and plant products.
- Government will designate the NPPO to be responsible for the administration of the Plant Health Surveillance and Pest Response System.

7.3.4 Treatment and Pest Management Systems

Excessive use of agricultural pesticides on crops have negatively impacted on the environment in the form of contamination of ground water sources, soil and air and has resulted in the reduction of the natural enemies of pests. High pesticide residues on agricultural commodities also negatively affect human health and trade. IPPC recommends that a systems approach should be implemented by using integrated

measures for pest risk management. This provides an alternative to single measures such as pesticide use in order to meet the appropriate level of phytosanitary protection.

Policy Recommendation

- Government will continue to promote the use of integrated pest management techniques to farmers and provide continuous training in this regard.
- Government will also promote the use of biologically based techniques to reduce the levels of pesticide use in agricultural production.
- Government will continue to train farmers in proper pesticide usage and management.

7.4 Analytical Issues

7.4.1 Scientific support

The synergies between the NPPO, appropriate research institutions and commodity boards need to be strengthened in order to provide adequate, timely, scientific support for phytosanitary concerns. The Plant Health Coordinating Committee was established to facilitate closer collaboration and coordination among actors in the plant health system. However, limited participation is being experienced from the Commodity Boards who do not see their importance in serving on such a committee.

Policy Recommendation

Government will also promote and support the strengthening of collaborative arrangements with the NPPO, appropriate research institutions and commodity boards to provide adequate and timely scientific support for phytosanitary concerns, capacity building, cooperative research and funding efforts.

7.5 Emergency Response for Pests and Disease Outbreaks

Contingency planning for the elimination of serious pests is not routinely practiced before its arrival precipitates an emergency situation. This is important especially if there is a need for international or regional cooperative action. Phytosanitary treatments identified must be the least restrictive to trade and must be supported by robust monitoring. Where pest outbreaks may occur, the selection of treatments or control strategies must be the least disruptive to the environment.

Policy Recommendation

- Government will establish a National Emergency Plant Pest Committee (NEPPC) to coordinate the response to pest incursions and outbreaks. The NEPPC will be chaired by the Minister of Agriculture & Fisheries or the Permanent Secretary with membership from national agencies - governmental or non-governmental as may be required. These institutions include the Ministry of Agriculture & Fisheries, Ministry of Health, Customs Department, Ministry of National Security, Ministry of Transport, Ministry of Justice, Ministry of Finance, Department of Local Government, Ministry of Industry, Investment and Commerce, Office of the Prime Minister, National Environmental Protection Agency, Farmers' Associations, regional institutions (UWI, CARDI, IICA, FAO) and other private sector entities.
- Government will finalize the Emergency Action Plan for exotic plant pests and diseases that details actions to be taken in the event of a pest or disease outbreak.
- In the event of pest and disease outbreaks, Government will implement treatment and/or control strategies that are least disruptive to the environment.
- Government will undertake public education and awareness campaigns to alert the public about the pest outbreak being experienced by the country in that time period.

7.6 Public Education and Awareness

The Jamaican public is typically unaware of the impact of actions such as improper use of pesticides and the illegal importation of fresh fruit and plants on the plant health system and national economy. Improper use of pesticides has negatively affected ground water sources, biodiversity and human health. Illegal importation of plants has led to pest infestations and the devastation of some sub-sectors.

Policy Recommendation

- Government will continue to educate the public about proper use and storage of pesticides.
- Government will raise public awareness about the impacts of illegal importation of plants and fresh fruit and the proper avenues for importation of these items.
- Government will undertake continuous campaigns to create and maintain the public awareness of pests and diseases of quarantine importance.

8.0 Implementation

8.1 The Ministry of Agriculture & Fisheries

The Ministry of Agriculture & Fisheries will be the main institution responsible for implementation of this policy, as the NPPO (Plant Quarantine/Produce Inspection Unit) and its complementary Agencies/Divisions falls within its purview.

The Ministry will therefore be responsible for implementing the following aspects of the policy:

- Establishment of the National Plant Health Board.
- Reviewing and amending the Plant Quarantine Act (1993) and its Regulations to:
 - Designate the Plant Quarantine/Produce Inspection Unit as the National Plant Protection Organization;
 - Ensure compliance with WTO-SPS standards and IPPC guidelines;
 - Give legal authority to RADA and the Plant Protection Unit to provide complementary plant health services to the National Plant Protection Organization (Plant Quarantine/Produce Inspection Unit); and
 - Establish a National Plant Health Board.
- Quarantine, inspection, surveillance and diagnostic services
- Establishment of the Pest Risk Analysis Unit
- Ensuring that adequate resources are available to execute the mandate of the National Plant Protection Organization and the Divisions and Agencies that provide complementary services.
- Upgrading and modernization of Research and Development Division's diagnostic laboratories.
- Coordinating and providing scientific support for phytosanitary concerns.
- Upgrading and maintaining the Plant Health Surveillance and Pest Response System database
- Collaborating with the Customs Department to increase surveillance at ports of entry.
- Creation of posts that will strengthen the institutional capacity in critical areas of diagnostics and quarantine.
- Providing training and development for staff on an ongoing basis
- Overseeing the establishment of the National Emergency Plant Pest Committee (NEPPC).
- Facilitating collaboration among institutions that deliver plant health services.
- Implementing the public education campaign on plant health matters.
- Implementing the public education and awareness programme

8.2 Rural Agricultural Development Authority

RADA is responsible for providing complementary services to the NPPO and will be responsible for implementing the following aspects of the policy:

- Training extension officers in improved methodologies to undertake general surveillance activities.
- Undertaking general surveillance activities.
- Training farmers in integrated pest management techniques.
- In collaboration with the Pesticides Control Authority, training farmers in proper pesticide usage and management.

8.3 Pesticides Control Authority

The Pesticides Authority will be responsible for implementing the following aspects of the policy:

- Drafting new regulation to the Pesticides Act (1975) that prescribes the maximum residue levels of pesticides on crops.
- Public education to promote the proper pesticides use and storage.
- In collaboration with RADA, continue to train farmers in proper pesticide usage and management.

8.4 Other Institutions

Other institutions which are critical to the implementation of the policy are:

- Sugar Industry Research Institute
- Coffee Board
- Banana Board
- Coconut Board
- Jamaica Citrus Protection Agency
- Jamaica Customs Department
- Jamaica National Agency for Accreditation
- National Environmental Planning Agency
- Ministry of Finance
- Ministry of Justice (Attorney General Department, Chief Parliamentary Counsel)
- Farmers/Producers Organizations
- Academia

8.5 Regional and International Organizations

Regional and international organizations which are critical to the implementation of the policy are:

- Food and Agriculture Organisation
- International Plant Protection Convention Secretariat
- Inter-American Institute for Cooperation on Agriculture
- Caribbean Agricultural Research and Development Institute
- Caribbean Plant Protection Commission
- CARICOM Secretariat

9.0 Monitoring and Evaluation

The Planning and Policy Division in collaboration with the National Plant Health Board shall be responsible for monitoring and evaluating the progress of implementation of the policy. A 3-year Implementation Plan will be developed by the Planning and Policy Division of the Ministry of Agriculture & Fisheries in consultation with all implementing entities. This will involve the identification of priority activities, projected targets and measurement indicators for each policy objective. Evaluation will be conducted annually by the National Plant Health Board and the Planning and Policy Division.

10.0 Policy Review

The policy will be reviewed every three years by the National Plant Health Board in collaboration with the Planning and Policy Division of the Ministry of Agriculture to determine its relevance and the necessary adjustments that need to be made to the document.

11.0 Linkages to Other Policies

11.1 National Agriculture Sector Plan

The National Agriculture Sector Plan aims to reposition the agricultural sector within the context of the Vision 2030-National Development Plan. The plan aims to achieve the following goals and outcomes:

- **Goal 1: Efficient Competitive Diversified Value-Added Agricultural Production**
 - Increased Productivity and Cost Efficiency of Agricultural Enterprises
 - Diversified Range of Agricultural Production including Higher Value-Added Production
 - Strengthened Application of Technology, Innovation, Research and Development to Agricultural Production
 - Development of Key Sub-Sectors

- **Goal 2: Strong Marketing Systems for Domestic and Export Markets**
 - Strong and Effective Marketing Information System
 - Supportive Marketing and Distribution Infrastructure and Network
 - Development of Expanded and New Markets for Jamaican Agricultural Products

- **Goal 3: Competent and Adequate Human Resources**
 - Provision of Work Force with Skills, Training and Education to Meet the Dynamic Needs of Sector
 - Adequate Long-Term Supply of Labour Force for Sector Development

- **Goal 4: Enabling and Facilitating Framework, Infrastructure and Support Services**
 - Appropriate Policy, Legislation and Regulations for Long-Term Development of Sector
 - Improved Access to Financing
 - Strengthened Facilitating Institutions
 - Strengthened Extension Services
 - Modernized and Upgraded Infrastructure and Facilitating Institutions
 - Satisfactory Working Conditions, Health and Safety of Sector Employees

CONCLUSION

The Plant Health Policy will result in a coordinated and internationally compliant plant health system that enhances Jamaica's plant health status and improve the integrity of primary crops and processed foods exported to major international markets. This will be accomplished by improving the institutional and legislative frameworks; scientific, quarantine, surveillance capabilities; emergency response systems for pest outbreaks; and pest management strategies used by farmers.

The implementation of the policy will result in:

- A reduction in the pest risk associated with plants, plant products and other regulated articles through the protection of industry players from unjustified phytosanitary measures and prevention of the entry and spread of pests that pose a risk to the Jamaican agricultural sector.
- Support for exporter compliance with plant health requirements of importing country.
- Enhancement of food security through the prevention of entry and spread of harmful pests and improvement in pest management systems.

The designation of the Plant Quarantine/Produce Inspection Unit as the NPPO and the establishment of a National Plant Health Board will improve coordination of the institutions involved in providing plant health services. The revision and enactment of legislation will result in Jamaica legally complying with key international agreements and conventions, thus ensuring greater acceptance of the country's food exports.

GLOSSARY

biotype	A subspecies of organism morphologically similar to but physiologically different from other members of the species.
consignment	A quantity of plants, plant products and/or other articles being moved from one country to another and covered, when required, by a single phytosanitary certificate (a consignment may be composed of one or more commodities or lots) [FAO, 1990; revised ICPM, 2001]
Biologically Based Techniques	Techniques employing the use of natural enemies, bio-rational compounds as a part of an integrated pest management programme.
eradication	Application of phytosanitary measures to eliminate a pest from an area [FAO, 1990; revised FAO, 1995; formerly eradicate].
harmonization	The establishment, recognition and application by different countries of phytosanitary measures based on common standards [FAO, 1995; revised CEPM, 1999; based on the World Trade Organization Agreement on the Application of Sanitary and Phytosanitary Measures].
pathogenic	ability of a micro organism to cause disease
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 [FAO, 1995].
phytosanitary authority	Any official responsible for implementing phytosanitary measures including the performance of inspections, tests, surveillance or treatments in connection with regulated pests .

Websites:

<http://www.nationalplantboard.org/>

Government of Jamaica. Laws of Jamaica. Plant Quarantine Act 1993 and Regulations 1999 and 2005. <http://www.moj.gov.jm/?q=law>

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Government of Jamaica. Laws of Jamaica. Natural Resource Conservation Act (1991). <http://www.moj.gov.jm/?q=law>

Government of Jamaica. Laws of Jamaica. The Forest Act (1995). <http://www.moj.gov.jm/?q=law>

World Trade Organisation. Agreement on the Application of Sanitary and Phytosanitary Measures. www.wto.org

Government of Jamaica

IMPLEMENTATION PLAN



Name of Project: NATIONAL PLANT HEALTH POLICY

Project Period: 2014-2018

Revision Date:

Replaces Document dated:

The Implementation plan has been developed by the Plant Health Coordinating Committee (PHCC) with the support of the Public Sector Modernization Division (PSMD) of the Cabinet Office.

January 2014

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LIST OF ACRONYMS

ACP	Agricultural Competitiveness Programme
ADRM	Agricultural Disaster Risk Management System
AED	Agricultural Export Division
ASSP	Agricultural Support Services Project
CAP	Certification of Agricultural Produce Programme
CARDI	Caribbean Agricultural Research and Development Institute
CIB	Coconut Industry Board Coffee Industry Board
CITES	Convention on International Trade in Endangered Species of Wild Flora and Fauna
CO	Cabinet Office
CODEX	Codex Alimentarius Commission
CPC	Chief Parliamentary Council
EPPR	Emergency Preparedness and Plant Pest Response
FAO	Food and Agriculture Organization of the United Nations
GAPs	Good Agricultural Practices
GMO	Genetically Modified Organism
GMPs	Good Manufacturing Practices
ICM	Integrated Crop Management
IICA	Inter-American Institute for Cooperation in Agriculture
IOJ	Institute of Jamaica
IPM	Integrated Pest Management
IPPC	International Plant Protection Convention
ISO	International Organization for Standardisation
JCPA	Jamaica Citrus Protection Agency
MoAF	Ministry of Agriculture and Fisheries
MOH	Ministry of Health
MOU	Memorandum of Understanding
NCBJ	National Certification Body of Jamaica
NEPA	National Environment and Planning Agency
NEPPC	National Emergency Plant Pest Committee
NFA/FD	National Forest Agency/Forestry Department
NGO	NonGovernmental Organization
NPHB	National Plant Health Board
NPPO	National Plant Protection Organization
NSC	National Surveillance Committee
PCA	Pesticides Control Authority
PEQ	Post Entry Quarantine
PHCC	Plant Health Coordinating Committee
PHIS	Plant Health Information System

PHS	Plant Health System
PMEU	Performance Management Evaluation Unit
PPU	Plant Protection Unit
PQ/PI	Plant Quarantine/ Produce Inspection Branch
PRA	Pest Risk Analysis
PSMD	Public Sector Modernization Division
RADA	Rural Agricultural Development Authority
RPPD	Rural Physical Planning Department
SRC	Scientific Research Council
SRI	Sugar Industry Research Institute
SPS	Sanitary and Phytosanitary Measures
TCPA	Town and Country Planning Authority
ToR	Terms of Reference
UWI	University of the West Indies
WTO-SPS	World Trade Organization Agreement on Sanitary and Phytosanitary Measures

1.0 PROJECT OVERVIEW

1.1 Background

The task of protecting Jamaican agriculture is becoming increasingly challenging, as natural and national borders that once were effective barriers to the spread and introduction of unwanted organisms or materials are now under pressure from the volumes of international traffic. Continental countries with land borders have always experienced difficulties in monitoring and controlling the movement of pests across their borders. Island nations are no longer protected by their surrounding oceans, as the volumes and speed of modern air and shipping traffic breach their natural defences against pest introduction. These challenges are also compounded by limited financial and human resources to safeguard these borders against unwanted pest introductions.

In addition, the intensification of production systems based on exotic species and climatic and environmental changes have all increased the risks of introducing harmful alien species. This poses increasing difficulties for phytosanitary authorities. In their day-to-day operation, phytosanitary authorities now face many demands such as assessment of pest risk, evaluation of control measures and planning for emergency responses to pest outbreaks.

The impacts of pests and unwanted species are widespread and have a negative effect on the environment, economy and society in general. Some of these pests have the capacity to cause damage to the natural environment and agricultural crops. Economic costs of pest eradication and long term pest control options are normally borne by taxpayers, farmers and ultimately, consumers. The application of pesticides to control unwanted pests leads to damage of the ecosystem, higher costs of production and negative effects on human health and nutrition.

Political and social impacts associated with regulated pests include the hampering of sustainable development opportunities as pest infestations and outbreaks negatively affect food security and rural stability. Pest outbreaks can impact negatively on small farmer incomes and lead to the deepening of poverty in rural areas due to the destruction of livelihoods.

1.2 Introduction

The Plant Health Policy was developed, which identified the gaps and failures in the current plant health system in light of requirements of international treaties and agreements and food safety and phytosanitary standards of our major trading partners. The policy identified issues faced by Government that hinder the development of an efficient plant health system. The Implementation Plan will therefore make provision for the revision of existing legislation, building of institutional capacity, scientific systems, quarantine capacity, surveillance systems, emergency response for pest outbreaks and increased public awareness.

The Implementation Plan:

1. Identifies all the activities to be undertaken in achieving each policy objective;
2. Identifies the roles and responsibilities of the various Agencies involved in the process to prevent duplication of efforts;
3. Identifies gaps, limitations and interrelated activities which may impact the successful implementation of the policy;
4. Develops specific timelines, performance indicators and funding requirement; and
5. Provides for the monitoring and evaluation of the policy implementation.

1.3 Objectives

The major objectives of this implementation plan are to:

1. Establish a national coordinating mechanism for plant health activities.
2. Improve the current plant health systems in accordance with international standards, obligations and best practices (e.g. International Plant Protection Convention {IPPC}, World Trade Organization Agreement on Sanitary and Phytosanitary Measures {WTO-SPS} Agreement etc.).
3. Promulgate modern plant health legislation, associated regulations and protocols
4. Strengthen technical and operational capacities of plant health entities
5. Facilitate the development of systems to mitigate the introduction, spread and impact of harmful alien pest species, which will be used in tandem with the national Agricultural Disaster Risk Management System (ADRM)
6. Promote the use of good agricultural practices (GAPs) and good manufacturing practices (GMPs) (post-harvest component)
7. Develop and implement public education and awareness programmes for plant health
8. Facilitate plant health research and development activities
9. Monitor and evaluate the plant health system

Interrelations and Interdependences of Objectives

The plan recognizes the inter-relations and interdependences of the various objectives and planned activities as illustrated in the implementation schedule in Section 6.5 of the document.

1.4 *Scope of work*

The Scope of work includes:
1. Establishment of the National Plant Health Board (NPHB) and National Emergency Plant Pest Committee (NEPPC); designation of National Plant Protection Organization (NPPO)
2. Authorizing the Plant Protection Unit (PPU), Rural Agricultural Development Authority (RADA) and Customs Department to provide complementary support to the NPPO
3. Institutionalization of the National Plant Health Coordinating Committee (PHCC) as the technical advisory to the NPHB
4. Enactment of modern plant health legislation and the revision of existing legislation governing plant health in each agency
5. Development of appropriate technical capacities and competences in plant health (i.e. monitoring, surveillance, quarantine, risk analysis etc.), in keeping with international best practices and standards
6. Promoting the use of GAPs and GMPs in keeping with international best practices and standards
7. Strengthening research and coordinating activities to provide adequate and timely scientific support for phytosanitary concerns, capacity building and cooperative research
8. Development of a public education programmes on plant health issues and their impact on environmental and human health
9. Establishing formal mechanisms for stakeholders participation in the development and sustainability of the Plant Health System (PHS)

The Scope of work includes:

10. Influencing the development of international standards through active participation in meetings, conferences and seminars i.e. Sanitary and Phytosanitary Measures (SPS), Codex Alimentarius Commission (CODEX), IPPC and International Organization for Standardization (ISO)
11. Establishment of mechanisms for the monitoring and evaluation of the national PHS

Interrelated Activities are the activities that will not be undertaken in this implementation plan but have implications/ impacts and supports the Plant Health Policy

1. E-government including the Port Community System
2. International Food Standards impacting trade
3. National Food Safety Policy (2011)
4. Jamaica Trade Policy 2001 (revised)
5. The development of a Food and Nutrition Security Policy
6. Jamaica National Agency for Accreditation (JANAAC)
7. National Certification Body of Jamaica (NCBJ)
8. Bureau of Standards Certification of Agricultural Produce (CAP) Programme
9. Implementation of the E-Trade System (export module)
10. Agricultural Competitiveness Programme (ACP)

Assumptions/Understanding

1. Shared vision and “buy in” among the Agencies

2. Cooperation by relevant stakeholders

3. Project will be adequately resourced

4. The political will to implement the plan

5. Legislative framework

2.0 RISK MANAGEMENT

Objectives	Major Issues	Recommendations
1. To establish a national coordinating mechanism for plant health activities	Fragmentation of responsibilities, gaps, duplication of activities and general lack of coordination among the agencies whose activities impact plant health	<ul style="list-style-type: none"> ▪ Designate Plant Quarantine/Produce Inspection Branch(PQ/PI) as the NPPO with support from RADA, PPU and the Customs Department ▪ Establish the NPHB ▪ Institutionalize the PHCC ▪ Establish the NEPPC ▪ Establish an integrated mandatory reporting system for sharing information ▪ Formalize collaborative arrangements with academia, commodity boards and non-governmental organizations (NGOs)
2. Improve the current plant health systems in accordance with international standards, obligations and best practices (e.g. IPPC, WTO-SPS Agreement)	Enforcement of global standards internationally and use of inadequate standards locally limit Jamaica's access to international markets	Adopt international standards and harmonize local standards
	Lack of coordination in the use of the standards	Improve coordination in the use of the standards
3. To promulgate modern	Lack of legal status to	Enact new legislation to

Objectives	Major Issues	Recommendations
plant health legislation, associated regulations and protocols	support the work of the NPHB and PHCC	empower the NPHB and PHCC
	There are several dated acts and regulations which are not harmonized with international standards and agreements	Revise dated acts and regulations
	There is no act that governs plant protection activities	Investigate the need for a Plant Protection Act
	Length of time which it take to promulgate legislation in large part due to Chief Parliamentary Council (CPC) processes	Seek early and effective engagement of the CPC
	Insufficient compliance with existing legislation	Promote better law enforcement, provide training and education
4. Strengthen technical and operational capacities of plant health entities	Inadequate scientific data and its use in decision making Limited access to scientific information	<ul style="list-style-type: none"> ▪ Strengthen mechanisms for generating, sourcing and accessing scientific data for decision making
	A need for transparent, science-based interventions	<ul style="list-style-type: none"> ▪ Provide further strengthening of the Pest Risk Analysis (PRA) Unit
	Inconsistent training and inadequate staffing in	Increase technical capacities of plant health professionals

Objectives	Major Issues	Recommendations
	appropriate disciplines	through training and increase staff complement
	Inadequate laboratory services	Upgrade and modernize laboratory facilities formally accredit relevant laboratories
5. Facilitate the development of systems to mitigate the introduction, spread and impact of alien pest species, which will be used in tandem with the national Agricultural Disaster Risk Management System (ADRM)	No formal comprehensive system of surveillance and data sharing	A comprehensive system for pest surveillance and monitoring and data sharing formalized
	Unscientific data collection by field and extension officers	Training of field and extension officers participating in surveillance
	Lack of contingency plans for the management of alien species	Establish the NEPPC
	The integrated pest emergency response system is not functioning	Reactivate and improve the integrated emergency pest response system
	Delayed activation of ADRM response system	Simulation for timely activation of response system when needed
6. Promote the use of GAPs and GMPs (post-harvest component)	Stakeholders are reluctant to adapt GAPs and GMPs such as integrated crop management (ICM) and post-harvest standards	Established Training and monitoring systems to foster the use of GMPs and GAPs
	Pesticides misuse by farmers	Provide training in pesticide usage and management
	No formal system for pesticide residue testing	Develop a coordinated programme for pesticide

Objectives	Major Issues	Recommendations
		residue monitoring
	Adverse impact of climate change on plant health and food security (e.g. high pest pressure and increased crop losses)	Develop climate change adaptation strategies
7. To develop public education programmes on plant health issues and their impact on human and environmental health	Lack of coordinated structure and funding to support public relations programs	Form partnerships with stakeholders for public relations and communication coordinating mechanism
8. Facilitate plant health research and development activities	Lack of coordinated efforts in setting priority research areas	Set priority areas for research with stakeholders
	Limited mechanisms for collaboration in research activities	Enhance the mechanisms for research and development
	Inadequate funding	Access funding through public-private partnerships and external funding agencies
9. Monitoring and evaluation of plant health system	Lack of emphasis on monitoring and evaluation	Collaborate with the Performance Management Evaluation Unit (PMEU) in the Cabinet Office

3.0 **ROLE AND FUNCTIONS OF ORGANIZATIONS INVOLVED**

The table sets out clearly the different agencies/organization involved in the project, and a summary of their roles and responsibilities.

Organization	Unit/Section	Roles/Functions
National Plant Health Board		Provides high level oversight, coordination and direction.
Plant Health Coordinating Committee		<ul style="list-style-type: none"> ▪ Provides technical support to the NPHB. ▪ Coordinates, advises, implements and monitors plant health issues.
National Plant Protection Organization		<ul style="list-style-type: none"> ▪ Issues phytosanitary certificates for consignments of plants, plant products and other regulated articles. ▪ Conducts surveillance of growing plants, particularly with the object of reporting the occurrence, outbreak and spread of pests, and of controlling those pests. ▪ Inspects, disinfests or disinfects consignments of plants and plant products moving in international traffic with the object of preventing the introduction and/or spread of pests and in order to meet phytosanitary requirements. ▪ Conducts pest risk analyses. ▪ Protects endangered areas and designates, maintains and conducts surveillance of pest free areas and

Organization	Unit/Section	Roles/Functions
		areas of low pest prevalence.
Ministry of Agriculture and Fisheries	Plant Protection Unit (PPU), Research and Development Division	<ul style="list-style-type: none"> ▪ Contributes to improved efficiency, productivity and enhanced competitiveness of plant commodities through development of cost effective and environmentally friendly technologies for the management of plant pest outbreaks, inclusive of honeybee pests. This technology is then transferred to farmers through extension. ▪ Provides improved and relevant pest diagnostic and advisory services to stakeholders. ▪ Maintains an updated pest register and determines pest status.
	Post Entry Quarantine (PEQ) Unit/Plant Protection Unit, Research and Development Division	<ul style="list-style-type: none"> ▪ Provides diagnostic testing of citrus budwood material as a part of the Citrus certification programme. ▪ Maintains citrus parent germplasm. ▪ Provides clean planting material for stakeholders. ▪ Monitors imported plant material and validates phytosanitary clearances issued by exporting countries.
	Plant Quarantine/Produce Inspection (PQ/PI)	<ul style="list-style-type: none"> ▪ Ensures that the highest quality, pest free produce is imported or exported into/from Jamaica. The Branch is

Organization	Unit/Section	Roles/Functions
	Branch	<p>also mandated to ensure that no harmful exotic pest is introduced into the country and becomes established.</p> <ul style="list-style-type: none"> ▪ Monitors activities to protect and enhance plant health and SPS measures. ▪ Conducts pest risk analyses. ▪ Coordinates pest surveillance and pest response activities. ▪ Certifies farms and nurseries.
	Rural Agricultural Development Authority (RADA)	<ul style="list-style-type: none"> ▪ Provides sustainable and environmentally safe crop/pesticide management advice to stakeholders. ▪ Transfers ICM/Integrated Pest Management (IPM) technologies generated by research to stakeholders. ▪ Instructs stakeholders on the safe and efficient use of pesticides. ▪ Conducts pest and pesticide surveillance activities and report findings to Research and Development. ▪ Maintains farmer registration database. ▪ Coordinates the ADRM at the parish levels. ▪ Collects and collates meteorological data for pest forecasting and crop

Organization	Unit/Section	Roles/Functions
	National Forest Agency (Forestry Department) (NFA/FD)	<p>zoning.</p> <ul style="list-style-type: none"> ▪ Maintain the forest cover at not less than 30% of the country ▪ Increase forest cover to at least 2% over the next 10 years ▪ Transfer the local experience and technology to two other territories in the region.
	Agricultural Export Division (AED)	<ul style="list-style-type: none"> ▪ Monitors pests affecting spice crops (e.g. ginger, tumeric, pimento and nutmeg). ▪ Develops and implements IPM programmes for spice crops. ▪ Conducts research on the efficacy of IPM systems.
Ministry of Health	Pesticides Control Authority (PCA)	<ul style="list-style-type: none"> ▪ Regulates the registration, use and disposal of pesticides. ▪ Issues licences to import and manufacture pesticides. ▪ Licenses pest control operators, applicators and farm stores. ▪ Promotes safe use and management of pesticides. ▪ Monitors pesticide residue on imported and locally produced foods.
Commodity Boards/Groups	Sugar Industry Research Institute (SIRI)	<ul style="list-style-type: none"> ▪ Monitors pests affecting sugarcane production and devises IPM strategies for their control.

Organization	Unit/Section	Roles/Functions
		<ul style="list-style-type: none"> ▪ Conducts research for improved sugarcane production.
	Coffee Industry Board (CIB)	<ul style="list-style-type: none"> ▪ Maintains the level of coffee pest at a manageable level (3-5% threshold) through monitoring, grower training and contracting research to develop appropriate pest management strategies.
	Banana Board	<ul style="list-style-type: none"> ▪ Conducts research on the management of banana pests.
	Coconut Industry Board (CIB)	<ul style="list-style-type: none"> ▪ Provides to growers coconut planting material resistant to lethal yellowing disease. ▪ Addresses the management of existing pest problems through research and development of IPM systems. ▪ Uses proactive approach to prevent and minimize the spread of exotic pests into coconut growing areas. ▪ Promotes the interest and efficiency of the coconut industry. ▪ Encourages the production of coconuts and regulates the purchase, sale, and exportation of coconuts. ▪ Keeps the government informed on the state of the industry. ▪ Advises government when any action is necessary. ▪ Arranges for the issuing of licences

Organization	Unit/Section	Roles/Functions
		<p>to manufactures of coconut products.</p> <ul style="list-style-type: none"> ▪ Arranges for insurance for coconut trees against damage by wind storm. ▪ Assists growers to market their crops. ▪ Carries out research on agricultural problems of the industry. ▪ Advises growers on their agricultural problems.
	Cocoa Industry Board	<ul style="list-style-type: none"> ▪ Promotes the growing of cocoa among farmers ▪ Provides technical support ▪ Purchases and processes wet cocoa beans ▪ Sells dried fermented beans.
Academic Institutions	University of the West Indies (UWI), Department of Life Sciences	<ul style="list-style-type: none"> ▪ Provides academic training and conducts research in the areas of arthropod biology and ecology, botanical pesticides and pesticide management.
	UWI Biotechnology Centre	<ul style="list-style-type: none"> ▪ Uses modern research tools (e.g. molecular tools) to generate information on agricultural pests, and develop plants with novel traits with greater degrees of resistance to plant pests. ▪ Develop <i>in vitro</i> methods for clean planting material, bio-pesticides, bio-active plant products, and soil-bio-ameliorants for <i>in vitro</i> and field

Organization	Unit/Section	Roles/Functions
		<p>trials.</p> <ul style="list-style-type: none"> ▪ Tests for bioactivity (e.g. antimicrobial) and develops bio-products (e.g. neem bio-pesticide) in collaboration with other UWI departments. ▪ Provides disease indexed micro propagated planting material for comparative studies. ▪ Develops soil ameliorants (e.g. biochar) that positively influence microbial soil populations around plant roots. ▪ Develops bio-pesticides, diagnostic kits and other non- genetically modified organism (GMO) agro-biotech tools.
	<p>Northern Caribbean University (NCU)</p>	<ul style="list-style-type: none"> ▪ Provides academic training and conducts research in the areas of arthropod biology and ecology, botanical pesticides and pesticide management. ▪ Tests for pesticides, caloric content of food and beverages, moisture, heavy metals and inorganic ions, microbiological, proteins, lipids, and carbohydrates for agricultural producers involved in domestic and export business. ▪ Conducts testing seminar sessions

Organization	Unit/Section	Roles/Functions
		<p>for farmers to address best practices in growth and maintenance of plants.</p> <ul style="list-style-type: none"> ▪ Provides pest-free plantlets to the public.
	College of Agriculture, Science and Education (CASE)	<ul style="list-style-type: none"> ▪ Provides academic training and conducts research in agriculture. ▪ Maintains a germplasm bank of all locally grown fruit trees. ▪ Diagnoses plant pathogens.
Regional Agricultural Research and Development	Caribbean Agricultural Research and Development Institute (CARDI)	<ul style="list-style-type: none"> ▪ Contributes to the achievement of the national goals for sustainable agricultural development as described in Vision 2030. ▪ Identifies gaps in addressing targeted priority areas through consultation with the Ministry of Agriculture and Fisheries and other stakeholders. ▪ Mobilises resources to address some identified gaps. ▪ Facilitates networking and coordination among institutions involved in agricultural development. ▪ Generates, transfer and apply appropriate technologies through research for development.
	Food Agricultural Organization of the United Nations (FAO)	<ul style="list-style-type: none"> ▪ Collects analyses and disseminates information. ▪ Advises governments on policy and planning.

Organization	Unit/Section	Roles/Functions
		<ul style="list-style-type: none"> ▪ Serves as an international forum for discussing food and agricultural issues and approving international standards and agreements. ▪ Provides direct aid for developments. ▪ Intervenes in times of crisis when food production and distribution are disrupted by human or natural disasters such as war, drought and insect infestations.
	Centre for Agricultural Bioscience International (CABI)	<ul style="list-style-type: none"> ▪ Contributes to improving food security, protecting biodiversity, supporting farmers and providing information to its member countries through scientific publishing, development projects and research, and microbial services.
	Inter-American Institute for Cooperation on Agriculture (IICA)	<ul style="list-style-type: none"> ▪ Provides technical cooperation in technology and innovation for agriculture, agricultural health and food safety, agribusiness, agricultural trade, rural development and training.
Other Organizations	Jamaica Citrus Protection Agency (JCPA)	<ul style="list-style-type: none"> ▪ Implements and monitors the mandatory citrus certification programme. ▪ Conducts citrus pest surveillance and recommend IPM strategies.
	National Environment and Planning Agency	<ul style="list-style-type: none"> ▪ Develops environmental and planning policies.

Organization	Unit/Section	Roles/Functions
	(NEPA)	<ul style="list-style-type: none"> ▪ Monitors natural resource assets and the state of the environment. ▪ Enforces environmental and planning regulations. ▪ Processes applications for environmental permits and licenses (e.g. introduction of species for biological control) and beach licenses. ▪ Grants planning approvals under the Town and Country Planning Act (TCPA). ▪ Grants Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) permits and certificates and Hunters' Licences. ▪ Provides advice on land use, planning and development. ▪ Provides information on environmental, planning and development issues. ▪ Conducts public education and awareness programmes on environmental and planning issues. ▪ Responds to environmental emergencies.

Plant health services provided by these institutions include quarantine, pest/disease diagnosis, pesticide regulation, pest management, surveillance and research.

4.0 LEGISLATIVE IMPLICATIONS

Legislative implications ensure that we have an effective plant health system in compliance with the following Acts and Regulations.

ITEM	CURRENT LEGISLATIONS	STATUS
1.	Plants (Quarantine) Act (1993)	Being reviewed
2.	Plant Quarantine Act, The Citrus Plant (Certification) Regulations (1999)	
3.	Plant Quarantine Act, Plant (Importation) Control (Amendments) Regulation (2005)	
4.	The Pesticides Act (1975)	
5.	The Pesticides Act, The Pesticides Regulations (1996)	
6.	The Pesticides Act, The Pesticides (Amendment) Regulations (2004)	
7.	The Pesticides Act, The Pesticides (Amendment) Regulations (2009)	
8.	The Natural Resources Conservation Authority Act (1991)	
9.	The Forest Act (1996)	
10.	Agricultural Produce Act (1926)	Being reviewed
11.	Agricultural Produce Act, The Agricultural Produce (Coffee) Regulations (1941)	
12.	Agricultural Produce Act, The Agricultural Produce (Tomatoes) Regulations (1948)	
13.	Agricultural Produce Act, The Citrus Fruit (Protection) Regulations (1948)	
14.	Agricultural Produce Act, The Agricultural Produce (Cocoa) Regulations (1950)	
15.	Agricultural Produce Act, The Agricultural Produce (Banana) Regulations (1969)	

ITEM	CURRENT LEGISLATIONS	STATUS
16.	Agricultural Produce Act, The Agricultural Produce (Vegetables, Fruits and Ground Provisions) (Export) Regulations (1969)	
17.	Agricultural Produce Act, The Agricultural Produce (Ginger) Regulations (1979)	
18.	Agricultural Produce Act, The Agricultural Produce (Pimento) Regulations (1988)	
19.	Pesticides Maximum Residues Levels in Crops Food and Feeding Stuff Regulations (2013)	Draft
20.	Food Storage and Prevention of Infestation Act (1958)	
21.	Food Storage and Prevention of Infestation Regulations (1973)	
22.	Standards Act (1969)	Being reviewed
23.	The Bees Control Act (1968)	To be reviewed
24.	Weights and Measures Act (1976)	Being reviewed
25.	Consumer Protection Act (2005)	
26.	Scientific Research Council Act (1960)	Revision pending
27.	The Fertilizers and Feeding Stuffs Act (1942)	
28.	The Fertilizers and Feeding Stuffs, The Fertilizers and Feeding Stuffs Regulations (1945)	
29.	The Public Health Act (1887)	To be revised
30.	The Public Health (Food Handling) Regulations (1998, amended 2000)	Being reviewed
31.	Rural Agricultural Development Authority Act (1990)	
32.	The Coconut Industry Board Control Act (1945)	

5.0 POLICY IMPLICATIONS

CURRENT POLICIES	IMPACT/STATUS
National Quality Policy (2001)	
Food Safety Policy (2010)	
E-Trade policy/IT	
Jamaica Trade Policy (2001)	
National Strategy and Action Plan on Biological Diversity in Jamaica (2003)	
Draft National Biosafety Policy (2011)	
Policy for Jamaica 's System of Protected Areas (1997)	
Forest Policy (2001) (updated Forest Land Use Policy, 1996)	
Towards a Watershed Policy for Jamaica (2006) (Green Paper No. 2/99) (revised December 2011)	
Draft Policy and Regulation for Mangroves and Coastal Wetlands Protection (1998)	
Towards a National Policy for Orchid Conservation (2007) (Green Paper No. 1/09)	
Draft National Policy for the Conservation of Sea grass (2001)	
National Forest Management and Conservation Plan (2001)	

6.0 THE IMPLEMENTATION PLAN

The implementation plan below identifies the phases, major outcomes and activities related to each objective, as well as the assignment of lead responsibility. The Implementation Plan is divided into the following five (5) sections:

1. Governance Framework
2. Overall Project Financing
3. The major Objectives, related Outcomes and means of verification.
4. Monitoring Implementation
5. Summary of the Implementation Schedule

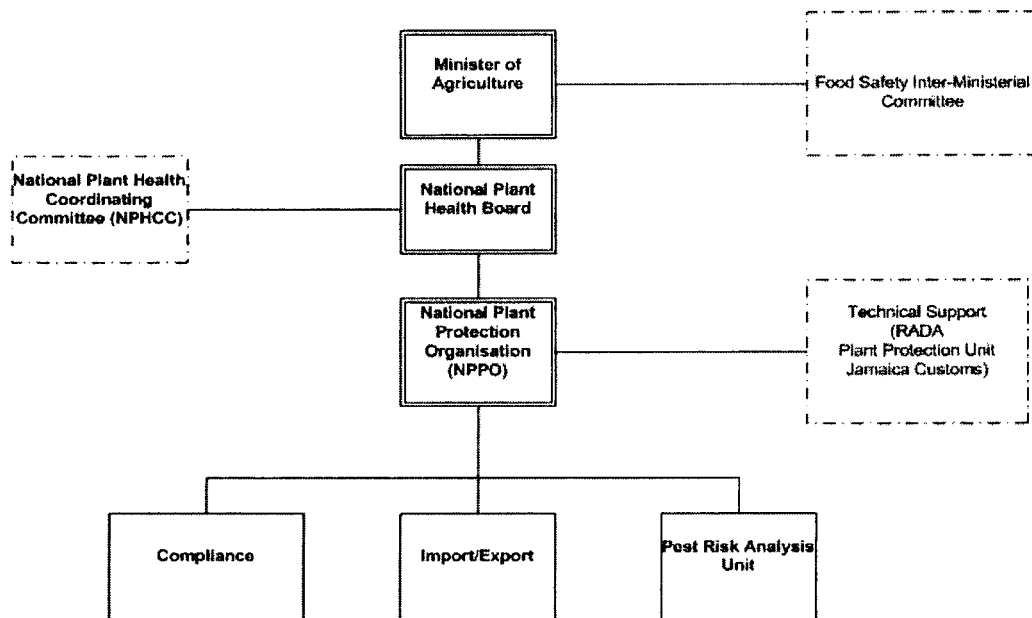
6.1 Governance Framework

The implementation of this policy will be governed by the structure below where the Government will designate the Plant Quarantine/Produce Inspection Unit as the National Plant Protection Organization for Jamaica, with complementary plant health services provided by RADA, Plant Protection Unit and Customs Department.

Government will also establish a National Plant Health Board to provide advice to the Minister responsible for Agriculture and to the new formally instituted NPPO on all matters related to plant health in the country.

The existing National Plant Health Coordinating Committee will serve as the technical advisory committee to the National Plant Health Board.

Plant Health Institutional Structure (Proposed)



Date: 23/11/2012

6.2 Overall Project Financing

OBJECTIVE	DESIRED OUTCOME	COST JA\$M
To establish a national coordinating mechanism for plant health activities	<ul style="list-style-type: none"> • Establish the NPHB • PQ/PI designated as NPPO with support from RADA, PPU and Customs • PHCC institutionalized • Collaborative arrangements formalized with academia, commodity boards and NGOs • The NEPPC established • Coordination of plant health systems improved 	29,200,000
Improve the current plant health system	<ul style="list-style-type: none"> • International standards adopted and existing standards harmonized • Plant health system fully compliant with international standards and best practices 	15,500,000
To promulgate modern plant health legislation	<ul style="list-style-type: none"> • Modern plant health legislation enacted and the existing legislation governing plant health revised <p>New legislation to empower the NEPPC, NPHB and PHCC enacted</p>	5,000,000
Strengthen technical and operational capacities	<ul style="list-style-type: none"> • Technical capacities of plant health professionals increased through training • Laboratories upgraded, modernized and select processes accredited 	110,500,000
Facilitate the development of sys.spread and impact of alien pest species	<ul style="list-style-type: none"> • Comprehensive system for pest surveillance and monitoring developed • Early detection of pest incursions increased • Emergency Preparedness and Plant Pest Response (EPPPR) Guidelines developed • The NEPPC activated • Develop a comprehensive Plant Health Information System (PHIS) 	222,600,000
Promote the use of GAPs and GMPs (post-harvest component)	<ul style="list-style-type: none"> • The use of GAPs and GMPs is promoted • Training in pesticide usage and management 	183,500,000

	<ul style="list-style-type: none"> • Training in GAPs and GMPs • National Pesticide residue monitoring programme for imported and locally produced crops • Climate change adaptation strategies developed 	
To develop public education programmes	<ul style="list-style-type: none"> • Increased public awareness 	12,000,000
Facilitate research and development	<ul style="list-style-type: none"> • Plant Health systems driven by relevant and accurate data 	100,600,000
Monitoring and evaluation of plant health system	<ul style="list-style-type: none"> • Structured monitoring and evaluation systems for the implementation of the Plant Health Policy and PHS 	3,000,000
Contingency 10%		68,190,000
TOTAL COST		750,090,000

The implementation of this plan will be financed through budgetary support from the line Ministries and their respective agencies; financing of specific activities by the Cabinet Office; through allocation of funds under Component 2 of the ACP which provides support for the improvement of an integrated, efficient and sustained Agricultural Health and Food Safety system and; additionally, by leveraging international funding, from donor agencies, through development projects.

6.3 Objectives and Outcomes

OBJECTIVE	DESIRED OUTCOME	HOW MEASURED/PERFORMANCE INDICATOR	COMPLETION DATE	LEAD ORGANIZATION
1. To establish a national coordinating mechanism for plant health activities	Establish the NPHB	The NPHB is established and functional		Ministry of Agriculture and Fisheries (MoAF)
	PQ/PI designated as NPPO with support from RADA, PPU and Customs	The NPPO is legislated and fully operational		Ministry of Agriculture and Fisheries (MoAF)
	PHCC institutionalized	PHCC institutionalized and legislated		NPHB, PHCC
	Collaborative arrangements formalized with academia, commodity boards and NGOs	Memorandum of understandings (MOUs) developed and signed		NPHB, PHCC
	The NEPPC established	The NEPPC established and functional		NPHB
	Coordination of plant health systems improved	Roles clearly defined and functions carried out		NPHB, PHCC
2. Improve the current plant health systems in accordance with international standards, obligations and best practices (e.g. IPPC, WTO-SPS Agreement etc.).	International standards adopted and existing standards harmonized	Adoption of CODEX, IPPC, SPS etc. standards		MoAF
	Plant health system fully compliant with international standards and best practices	<ul style="list-style-type: none"> ▪ Number of standards adopted ▪ Reduced incidence of non-compliance 		MoAF

OBJECTIVE	DESIRED OUTCOME	HOW MEASURED/PERFORMANCE INDICATOR	COMPLETION DATE	LEAD ORGANIZATION
3. To promulgate modern plant health legislation, associated regulations and protocols	Modern plant health legislation enacted and the existing legislation governing plant health revised	Acts and Regulations revised, amended, consolidated or repealed to support the plant health policy and system		MoAF, Ministry of Health (MOH)
	New legislation to empower the NEPPC, NPHB and PHCC enacted	New legislation enacted		MoAF
4. Strengthen technical and operational capacities of plant health entities	Technical capacities of plant health professionals increased through training	<ul style="list-style-type: none"> • Increase in technical competence • Plant Health professionals trained 		MoAF
	Laboratories upgraded, modernized and select processes accredited	Number of laboratories upgraded, modernized and processes accredited		
5. Facilitate the development of systems to mitigate the introduction, spread and impact of alien pest species, which will be used in tandem with the national	Comprehensive system for pest surveillance and monitoring developed	<ul style="list-style-type: none"> ▪ Increased surveillance and monitoring capabilities ▪ Protocols developed for surveillance activities 		MoAF
	Early detection of pest incursions increased	Increased early detection of pest incursions		
	Emergency Preparedness and Plant Pest Response	<ul style="list-style-type: none"> ▪ Generic emergency action plan for exotic plant pests completed 		

OBJECTIVE	DESIRED OUTCOME	HOW MEASURED/PERFORMANCE INDICATOR	COMPLETION DATE	LEAD ORGANIZATION
Agricultural Disaster Risk Management System (ADRM)	(EPPPR) Guidelines developed	<ul style="list-style-type: none"> ▪ Emergency action plan for priority quarantine plant pests completed 		
	The NEPPC activated	NEPPC functional		
	Develop a comprehensive Plant Health Information System (PHIS)	<ul style="list-style-type: none"> ▪ PHIS developed ▪ Pest populations managed below economic levels ▪ Impact of plant pest on trade minimized 		
6. Promote the use of GAPs and GMPs (post-harvest component)	The use of GAPs and GMPs is promoted	<ul style="list-style-type: none"> ▪ Increased use of ICM by farmers ▪ Post-harvest practices improved ▪ Reduction in the use of pesticide, especially class I and II pesticides ▪ Shift towards the use of environmentally friendly pesticides ▪ Increased use of non-chemical strategies 		MoAF; MOH
Training in pesticide usage and management	<ul style="list-style-type: none"> ▪ An increase in the number of stakeholders trained ▪ Judicious use of pesticides 			
Training in GAPs and GMPs	<ul style="list-style-type: none"> ▪ Improved food security and safety and environmental wellbeing ▪ Decreased cost of crop production ▪ Increased compliance with international trade standard 			

OBJECTIVE	DESIRED OUTCOME	HOW MEASURED/PERFORMANCE INDICATOR	COMPLETION DATE	LEAD ORGANIZATION
7. To develop public education programmes on plant health issues and their impact on human and environmental health	National Pesticide residue monitoring programme for imported and locally produced crops	<ul style="list-style-type: none"> ▪ Traceability system implemented ▪ Reduction in the use of class I and II pesticides Residue levels kept within established maximum residue limits (MRLs)		
	Climate change adaptation strategies developed	<ul style="list-style-type: none"> ▪ Crop and pest forecasting systems developed and employed ▪ Technologies developed and adapted to mitigate effects of climate change 		MoAF
8. Facilitate plant health research and development activities	Plant Health systems driven by relevant and accurate data	Increased availability and application of scientific data and information		MoAF
9. Monitoring and evaluation of plant	Structured monitoring and evaluation systems for the	<ul style="list-style-type: none"> ▪ Policy implementation plan monitored ▪ Plant Health Policy monitoring and 		Cabinet Office (CO)

OBJECTIVE	DESIRED OUTCOME	HOW MEASURED/PERFORMANCE INDICATOR	COMPLETION DATE	LEAD ORGANIZATION
health system	implementation of the Plant Health Policy and PHS	evaluation systems established. <ul style="list-style-type: none"> ▪ Systems periodically reviewed and verified 		

6.4 Monitoring Implementation

The monitoring of project implementation will be as agreed in this document. The format for reporting the status of key activities is outlined below.

6.4.1 Project Activities and Status

OBJECTIVE #1: To establish a national coordinating mechanism for plant health services

DESIRED OUTCOMES	PLANNED ACTIVITIES	MEASURED/PERFORMANCE INDICATOR	HOW	TARGET GROUP	AGENCY RESPONSIBLE	ORIGINAL COMPLETION DATE	STATUS	COST JA \$M
Establish the NPHB	Select Board composition	Board composition selected		Responsible Ministers and Permanent Secretaries	MoAF	March 2014		0.0
	Prepare terms of reference (TOR) for Board	TOR prepared and approved by relevant stakeholders						0.1
PQ/PI designated as NPPO with support from RADA, PPU and Customs	Amend the Plant Quarantine Act	Plant Quarantine Act amended		RADA, PQ/PI, PPU, Customs	MoAF – Legal Department	August 2014		1.0
		Amendment of the Act approved by Parliament				August 2015		
PHCC institutionalized	Prepare TOR	TOR prepared and approved		RADA, PQ/PI, PPU, NEPA, Academia, PCA, CARDI, JCPA,	MoAF	April 2014		0.1
		PHCC established and functional			MoAF – Legal Department	August 2015		15.0

DESIRED OUTCOMES	PLANNED ACTIVITIES	MEASURED/PERFORMANCE INDICATOR	HOW	TARGET GROUP	AGENCY RESPONSIBLE	ORIGINAL COMPLETION DATE	STATUS	COST JA \$M
Collaborative arrangements formalized with academia, commodity boards and NGOs	Prepare TOR & MOUs	TOR & MOUs prepared and approved		Academia, Agricultural Institutions, Commodity Boards and NGOs	PHCC	September 2014		1.5
The National Emergency Plant Pest Committee (NEPPC) established	Prepare TOR, MOU & Establish NEPPC	TOR & MOU prepared. The National Emergency Plant Pest Committee established and functional.		NEPA, ODPEM, Farmers' Groups, Academia, Ministries of Justice, Transport, Commerce, Security, and Finance	PHCC & MoAF	March 2014		1.5
Coordination of	Define the	Governance Framework Manual		RADA, PQ/PI,	MoAF	December 2014		10.0

DESIRED OUTCOMES	PLANNED ACTIVITIES	HOW MEASURED/PERFORMANCE INDICATOR	TARGET GROUP	AGENCY RESPONSIBLE	ORIGINAL COMPLETION DATE	STATUS	COST JA \$M
plant health systems improved	specific roles of respective Agencies	with defined roles and responsibilities developed	PPU, NEPA, UWI, CARDI, IOJ, JCPA, PCA, Customs, NEA/FD, Commodity Boards				
	Established integrated and coordinated mechanism	Agreed mechanism developed and implemented					

OBJECTIVE #2: Improve the current plant health systems in accordance with international standards, obligations and best practices
(e.g. IPPC, WTO-SPS Agreement etc.)

DESIRED OUTCOMES	PLANNED ACTIVITIES	HOW MEASURED/PERFORMANCE INDICATOR	TARGET GROUP	AGENCY RESPONSIBLE	ORIGINAL COMPLETION DATE	STATUS	COST JA \$M
International standards adopted and existing standards harmonized	Consultation with trading partners and stakeholders on existing standard	Documentation on consultation held in order to inform stakeholders	Trade partners, exporters, importers, farmers, and other	MoAF	December 2018		12.5
	Review existing legislation and amend where necessary	Legislation reviewed and amended	stakeholders	MoAF – Legal Department	December 2018		1.0
Plant health system fully compliant with international standards and best practices	WTO notification	Standards are published by WTO on website etc.		MoAF – PQ			0.0
	Acquire technical assistance to conduct audit and gap analysis	Audit and gap analysis reports prepared and approved by relevant stakeholders	All stakeholders involved in plant health	MoAF	July 2014		1.0
	Acquire technical assistance to prepare implementation plan	Implementation plan prepared and approved by relevant stakeholders					1.0
	Implementation of	Recommendations from			December 2018		1.0

DESIRED OUTCOMES	PLANNED ACTIVITIES	HOW MEASURED/PERFORMANCE INDICATOR	TARGET GROUP	AGENCY RESPONSIBLE	ORIGINAL COMPLETION DATE	STATUS	COST JA \$M
	plan	implementation plan completed					

OBJECTIVE #3: To promulgate modern plant health legislation, associated regulations and protocols

DESIRED OUTCOMES	PLANNED ACTIVITIES	HOW MEASURED/PERFORMANCE INDICATOR	TARGET GROUP	AGENCY RESPONSIBLE	ORIGINAL COMPLETION DATE	STATUS	COST JA \$M
Modern plant health legislation enacted and the existing legislation governing plant health revised	Review existing legislation	Legislation reviewed	Relevant stakeholders	MoAF – Legal Counsel, CPC, MOH	December 2014	Review begun on some legislation	5.0
New Legislation to empower the NEPPC, NPHB and PHCC enacted	Promulgate legislation for the establishment of the NEPPC, NPHB and PHCC	Legislation enacted		MoAF – Legal Counsel, CPC, MOH, CO, PHCC	August 2015		
	Legal framework established for the individual agencies to operate within the National Plant Health Policy	Legislation enacted		MoAF – Legal Counsel, MOH	August 2015		

OBJECTIVE #4: Strengthen technical and operational capacities of plant health entities

DESIRED OUTCOMES	PLANNED ACTIVITIES	HOW MEASURED/PERFORMANCE INDICATOR	TARGET GROUP	AGENCY RESPONSIBLE	ORIGINAL COMPLETION DATE	STATUS	COST JA \$M
Technical capacities of plant health professionals increased through training	Conduct training needs assessment	Training needs assessment report produced	RADA, PPU, PQ/PI, UW/I, NEPA, PCA,	RADA, PQ/PI, PPU, NEPA, UW/I, CARDI,	June 2014		1.5
	Develop Training Plan	Training Plan developed	CARDI, JCPA, Customs, Commodity Boards	JCPA, PCA, Customs, Commodity Boards	December 2014	Ongoing	
Laboratories upgraded, modernized and formally accredited	Procure technical assistance to evaluate and make recommendations for existing laboratory testing capacity	Report produced and accepted	PQ/PI, PPU, PEQ, Rural Physical Planning Department (RPPD), Academia, Commodity Boards, SRC	MoAF/ACP	August 2014		4.0

DESIRED OUTCOMES	PLANNED ACTIVITIES	HOW MEASURED/PERFORMANCE INDICATOR	TARGET GROUP	AGENCY RESPONSIBLE	ORIGINAL COMPLETION DATE	STATUS	COST JA \$M
	Implement recommendations: - Acquire and/or upgrade infrastructure and equipment - Certification/ accreditation of priority methods and tests	Physical infrastructure, equipment and supplies in place Labs certified, and methods/tests accredited	PPU, PQ/PI, PEQ, Commodity Boards	MoAF/ ACP Commodity Boards, JANNAAC	August 2014 December 2017		100.0 5.0

OBJECTIVE #5: Facilitate the development of systems to mitigate the introduction, spread and impact of alien pest species, which will be used in tandem with the national Agricultural Disaster Risk Management System (ADRM)

DESIRED OUTCOMES	PLANNED ACTIVITIES	HOW MEASURED/PERFORMANCE INDICATOR	TARGET GROUP	AGENCY RESPONSIBLE	ORIGINAL COMPLETION DATE	STATUS	COST JA \$M
Comprehensive system for pest surveillance and monitoring developed	Review existing surveillance and monitoring system	Surveillance and monitoring system reviewed and report provided based on the established standards	PQ/PI, PPU, RADA, PEQ, Commodity Boards, IOI, Academia, RPPD, NEPA, JCPA, NFA/FD	MoAF	July 2014	TOR for the consultancy have been drafted	4.0
						TOR for the NSC have been drafted	
Officers trained in surveillance	Train field officers in survey methodologies	Number of officers trained in survey methodologies	All agencies responsible for surveillance	MoAF	December 2018		100.0
The NEPPC activated in response to pest incursion	Activate the NEPPC	The NEPPC is activated and simulation conducted	ODPEM, NEPA, Farmers' Groups,		June 2014		2.0

DESIRED OUTCOMES	PLANNED ACTIVITIES	HOW MEASURED/PERFORMANCE INDICATOR	TARGET GROUP	AGENCY RESPONSIBLE	ORIGINAL COMPLETION DATE	STATUS	COST JA \$M
Emergency Preparedness and Plant Pest Response (EPPPR) Guidelines completed	Complete Guidelines for the EPPPR for Jamaica	The EPPPR Guidelines for Jamaica is completed	PHCC		December 2014	Document has been drafted	1.0
	Develop Emergency Action Plan for priority pests	Action Plan developed	PHCC				
Develop a comprehensive Plant Health Information System (PHIS)	Assess the current plant health information system (e.g. PHSPRS)	Report prepared and recommendations implemented	All stakeholders that have plant health information systems	MoAF/ACP	December 2015	TOR drafted	3.6

OBJECTIVE #6: Promote the use of GAPs and GMPs (post-harvest component)

DESIRED OUTCOMES	PLANNED ACTIVITIES	HOW MEASURED/ PERFORMANCE INDICATOR	TARGET GROUP	AGENCY RESPONSIBLE	ORIGINAL COMPLETION DATE	STATUS	COST JA \$M
The use of GAPs and GMPs is promoted	Publish generic GAP and GMP manuals	GAP and GMP manuals published	Farmers, exporters, extension officers and researchers	MoAF	September 2012 (GAPs)	Generic GAP completed	2.0
					February 2013 (GMPs)	Review of GMP manual completed	
						Activity will be implemented under the Ministry's food safety programme	
	Publish crop specific GAP manuals	Crop specific GAP manuals developed and published			December 2015		15.0
	Placement of manuals on the Ministry's website (for viewing only)	Manuals placed on Ministry's website			December 2018		0.0
	Prepare and implement public education and	Public Awareness programme prepared and			December 2018		6.0

DESIRED OUTCOMES	PLANNED ACTIVITIES	HOW MEASURED/ PERFORMANCE INDICATOR	TARGET GROUP	AGENCY RESPONSIBLE	ORIGINAL COMPLETION DATE	STATUS	COST JA \$M
	awareness programme for GAPs and GMPs manuals	implemented					
Training in GAPs and GMPs	Train stakeholders in applying GAPs and GMPs	Technical staff and farmers trained in GAPs	Relevant staff, exporters	MOAF	December 2015	Under the Ministry's	20.0
		Technical staff, farmers and all active exporters trained and assessed in GMP	Relevant staff, farmers		December 2018	FSMA 10,000 farmers targeted for training for in 2013	20.0
Training in pesticide usage and management	Train stakeholders in the use and management of pesticides	Farmers and other stakeholders trained and assessed in pesticide usage and management	Farmers and/or pesticide applicators, exporters, technical staff		December 2018	Trainings initiated with exporters and technical staff (January- March 2012)	5.0
National Pesticide residue monitoring programme for imported and locally produced crops	Review the current monitoring programme	Monitoring programme reviewed	Labs, Regulatory bodies	MOH	December 2014	Some monitoring is	0.2
	Adopt relevant international standards (eg. Codex MRLs)	Relevant international standards adopted		MOH	December 2014	done by PCA and FSPID	0.0
	Update current monitoring programme (inspection, sampling,	Functional and effective monitoring programme (supplies, protocols,	Fresh market exporters, farmers	MOH, MOAF, MHC	December 2018		25

DESIRED OUTCOMES	PLANNED ACTIVITIES	HOW MEASURED/ PERFORMANCE INDICATOR	TARGET GROUP	AGENCY RESPONSIBLE	ORIGINAL COMPLETION DATE	STATUS	COST JA \$M
Climate change adaptation strategies developed	etc) for pesticide residue levels	procedures, staffing, etc) ■ Pesticide residue levels of targeted crops are monitored and data available					
	To develop MOUs amongst relevant stakeholders	MOUs developed and signed	Labs, Regulatory bodies		December 2014		0.3
	Provide training for officers in pesticide residue monitoring	Number of officers trained	Labs, Regulatory bodies		December 2018		5
Climate change adaptation strategies developed	Develop and/or adopt and implement crop and pest forecasting systems for specific pests/crops	<ul style="list-style-type: none"> ■ Crop and pest forecasting systems developed and implemented ■ Impacts of pest outbreaks triggered by climate related factors reduced 	Agricultural stakeholders	MoAF, Ministry of Water, Land, Environment and Climate Change	December 2018	CAMI project developing forecasting system for two crop pests (Black Sigatoka and Citrus Psyllid)	30
	Develop and/or adopt technologies to mitigate the effects of climate change	Technologies developed and/or adapted to mitigate the effects of climate change				Department of Geology and Geography (UWI) are	50

DESIRED OUTCOMES	PLANNED ACTIVITIES	HOW MEASURED/ PERFORMANCE INDICATOR	TARGET GROUP	AGENCY RESPONSIBLE	ORIGINAL COMPLETION DATE	STATUS	COST JA \$M
	Document pest mitigation strategies	Pest mitigation strategies documented				developing forecasting systems for crop production (e.g. sweet and irish potatoes)	
						Some adaptation strategies already exist	5

OBJECTIVE #7: To develop public education programmes on plant health issues and their impact on environmental and human health

DESIRED OUTCOMES	PLANNED ACTIVITIES	HOW MEASURED/PERFORMANCE INDICATOR	TARGET GROUP	AGENCY RESPONSIBLE	ORIGINAL COMPLETION DATE	STATUS	COST JA \$M
Increased public awareness	Develop a public education and awareness strategy Prepare and disseminate public education materials (e.g. brochures, fliers, videos) Conduct educational workshops, and stakeholders forums	Increased public compliance	General public including Farmers' Groups/Associations, Exporters, Importers, Custom brokers, and Shipping Association of Jamaica	MoAF, MOH, MHC, Ministry of Water, Land, Environment and Climate Change	December 2018	ACP has some funds available to support this activity	12

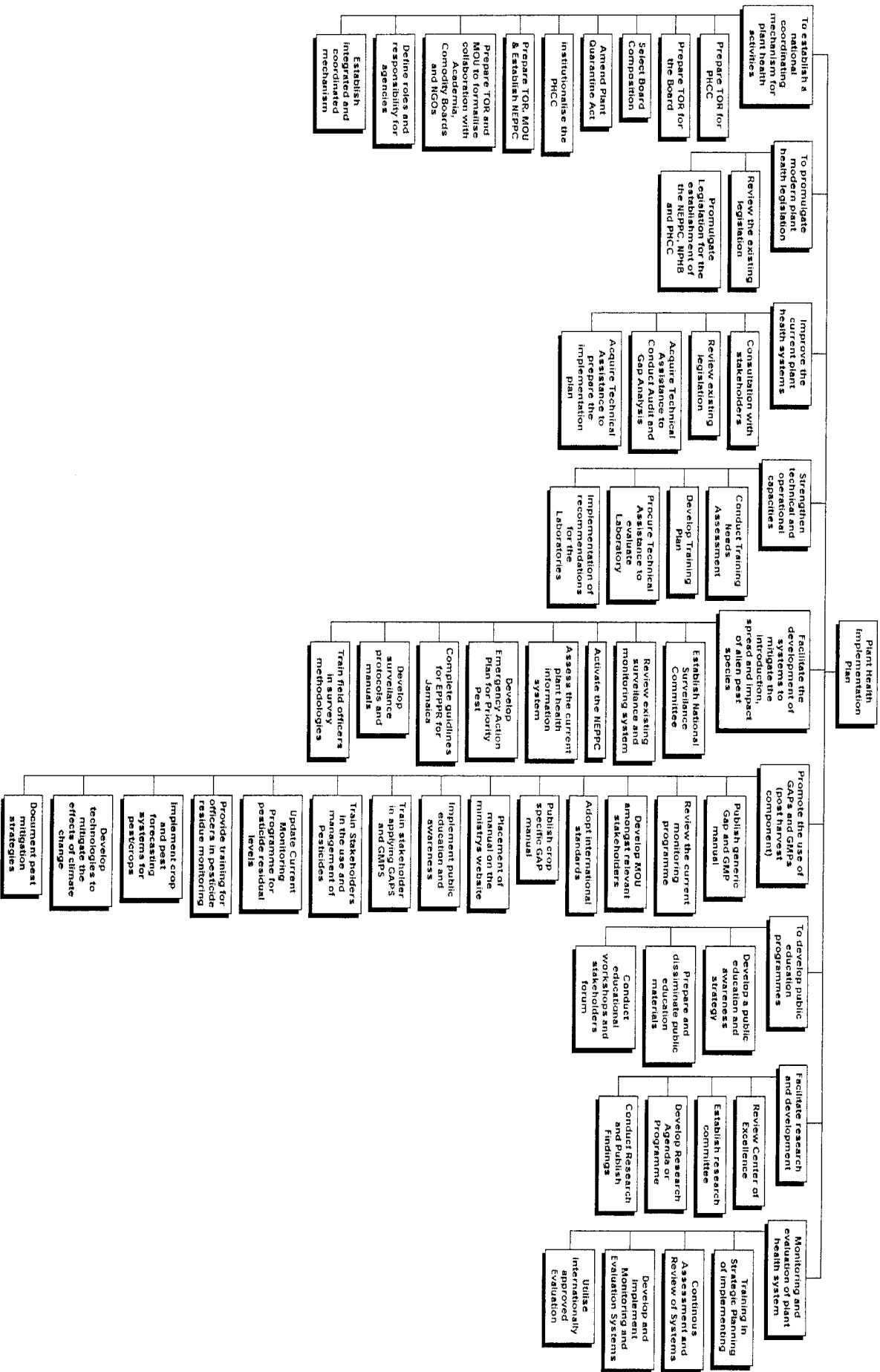
OBJECTIVE #8: Facilitate research and development activities

DESIRED OUTCOMES	PLANNED ACTIVITIES	HOW MEASURED/PERFORMANCE INDICATOR	TARGET GROUP	AGENCY RESPONSIBLE	ORIGINAL COMPLETION DATE	STATUS	COST JA \$M
Plant Health systems driven by relevant and accurate data	Review the status of the Centre of Excellence and determine the way forward	Review completed and way forward determined	PHCC	MoAF	May 2014		0.0
	Establish research subcommittee	Research subcommittee established	Research stakeholders		August 2014		0.1
	Develop Research Agenda or Programme	Research agenda developed and approved and is in keeping with local needs and international best practices			December 2014		0.5
	Conduct research and publish findings	Research information is shared with the public	Plant health stakeholders and general Public		December 2018		100
		Policy decisions guided by research	Policymakers				0.0

OBJECTIVE #9: Monitoring and evaluation of plant health systems

DESIRED OUTCOMES	PLANNED ACTIVITIES	MEASURED/PERFORMANCE INDICATOR	HOW	TARGET GROUP	AGENCY RESPONSIBLE	ORIGINAL COMPLETION DATE	STATUS	COST JA \$M
Structured monitoring and evaluation systems for the implementation of the Plant Health Policy	Continuous assessment and review of systems	Audits done and implementations recommended	Monitoring and evaluation systems developed and implemented based on GOJ/PMES	NPHB	Audit teams (internal and external)	December 2018		3
	Utilise Internationally approved evaluation tools e.g. PCE, PVS, CODEX etc.							
	Training in strategic planning of implementation policy	Persons trained in strategic planning		PHCC	MoAF	February 2014		

6.4.2 Work Breakdown Structure (WBS)



6.5 Overall Implementation Schedule

ID	Task Name	Start	Finish	11	2012		2013		2014		2015		2016		2017		2018
				H2	H1	H2	H1	H2	H1	H2	H1	H2	H1	H2	H1	H2	H1
1	Plant Health Implementation Plan	Mon 04/02/13	Mon 04/02/19														
2	To establish a national coordinating mechanism for plant health activities	Mon 31/12/12	Mon 31/08/15														
3	Prepare TOR for PHCC	Tue 20/11/12	Mon 31/12/12														
4	Prepare TOR for the Board	Mon 04/02/13	Fri 01/03/13														
5	Select Board Composition	Mon 04/03/13	Fri 29/03/13														
6	Amend Plant Quarantine Act	Tue 14/05/13	Mon 31/08/15														
7	Institutionalise the PHCC	Tue 08/07/14	Mon 31/08/15														
8	Prepare TOR, MOU & Establish NEPPC	Tue 19/02/13	Mon 30/09/13														
9	Prepare TOR and MOU to formalise collaboration with Academia, Commodity Boards and NGOs	Mon 08/04/13	Sun 30/06/13														
10	Define roles and responsibility for agencies	Thu 14/08/14	Wed 31/12/14														
11	Establish integrated and coordinated mechanism	Thu 14/08/14	Wed 31/12/14														
12	To promulgate modern plant health legislation	Mon 04/02/13	Mon 31/08/15														
13	Review the existing legislation	Mon 04/02/13	Fri 30/08/13														
14	Promulgate Legislation for the establishment of the NEPPC, NPHB and PHCC	Tue 01/10/13	Mon 31/08/15														
15	Improve the current plant health systems	Thu 28/03/13	Mon 31/12/18														
16	Consultation with stakeholders	Tue 27/05/14	Mon 31/12/18														
17	Review existing legislation	Mon 01/04/13	Fri 28/12/18														
18	Acquire Technical Assistance to Conduct Audit and Gap Analysis	Thu 28/03/13	Wed 31/07/13														
19	Acquire Technical Assistance to prepare the implementation plan	Wed 28/08/13	Tue 31/12/13														
20	Strengthen technical and operational capacities	Mon 25/02/13	Sun 31/12/17														
21	Conduct Training Needs Assessment	Mon 25/02/13	Sun 30/06/13														
22	Develop Training Plan	Mon 01/07/13	Fri 01/11/13														
23	Procure Technical Assistance to evaluate Laboratory	Thu 28/03/13	Wed 31/07/13														
24	Implementation of recommendations for the Laboratories	Mon 28/04/14	Sun 31/12/17														
25	Facilitate the development of systems to mitigate the introduction, spread and impact of alien pest species	Mon 08/04/13	Mon 31/12/18														
26	Establish National Surveillance Committee	Mon 08/04/13	Sun 30/06/13														
27	Review existing surveillance and monitoring system	Mon 08/04/13	Sun 30/06/13														
28	Activate the NEPPC	Mon 08/09/14	Fri 28/11/14														
29	Assess the current plant health information system	Wed 05/06/13	Tue 31/12/13														
30	Develop Emergency Action Plan for Priority Pest	Wed 08/05/13	Tue 31/12/13														
31	Complete guidelines for EPPPR for Jamaica	Mon 15/04/13	Fri 02/01/15														
32	Develop surveillance protocols and manuals	Mon 10/06/13	Fri 28/12/18														
33	Train field officers in survey methodologies	Tue 31/01/17	Mon 31/12/18														
34	Promote the use of GAPs and GMPs (post harvest component)	Tue 05/02/13	Mon 31/12/18														
35	Publish generic Gap and GMP manual	Tue 05/02/13	Thu 28/02/13														
36	Review the current monitoring programme	Thu 14/03/13	Wed 31/07/13														
37	Develop MOU amongst relevant stakeholders	Wed 27/03/13	Tue 31/12/13														
38	Adopt international standards	Thu 20/06/13	Wed 31/12/14														
39	Publish crop specific GAP manual	Fri 26/04/13	Thu 31/12/15														
40	Placement of manual on the ministry's website	Tue 03/03/15	Mon 31/12/18														
41	Implement public education and awareness	Tue 03/03/15	Mon 31/12/18														
42	Train stakeholder in applying GAPs and GMPS	Tue 02/04/13	Mon 31/12/18														
43	Train Stakeholders in the use and management of Pesticides	Tue 02/04/13	Mon 31/12/18														
44	Update Current Monitoring Programme for pesticide residual levels	Tue 02/04/13	Mon 31/12/18														
45	Provide training for officers in pesticide residue monitoring	Tue 03/03/15	Mon 31/12/18														
46	Implement crop and pest forecasting systems for pest/crops	Tue 02/04/13	Mon 31/12/18														
47	Develop technologies to mitigate the effects of climate change	Tue 27/05/14	Mon 31/12/18														
48	Document pest mitigation strategies	Tue 14/08/18	Mon 31/12/18														
49	To develop public education programmes	Mon 15/07/13	Mon 31/12/18														
50	Develop a public education and awareness strategy	Mon 15/07/13	Fri 29/11/13														
51	Prepare and disseminate public education materials	Mon 06/01/14	Mon 31/12/18														
52	Conduct educational workshops and stakeholders forum	Mon 06/01/14	Fri 28/12/18														
53	Facilitate research and development	Mon 04/02/13	Mon 31/12/18														
54	Review Center of Excellence	Mon 04/02/13	Fri 29/03/13														
55	Establish research committee	Thu 11/04/13	Wed 31/07/13														
56	Develop Research Agenda or Programme	Wed 05/06/13	Tue 31/12/13														
57	Conduct Research and Publish Findings	Tue 02/04/13	Mon 31/12/18														
58	Monitoring and evaluation of plant health system	Fri 08/02/13	Mon 31/12/18														
59	Training in Strategic Planning of implementing	Fri 08/02/13	Thu 28/02/13														
60	Continuous Assessment and Review of Systems	Tue 02/04/13	Mon 31/12/18														
61	Develop and Implement Monitoring and Evaluation Systems	Tue 02/04/13	Mon 31/12/18														
62	Utilise Internationally approved Evaluation	Tue 02/04/13	Mon 31/12/18														

6.6 Annual Breakdown of Costs for Implementation

**Implementation of Plant Health Policy
Budget 2012-2018**

To establish a national coordinating mechanism for plant health activities	4,200,000	10,000,000	10,000,000	5,000,000	0	0	29,200,000
Improve the current plant health systems	0	5,000,000	2,500,000	2,000,000	2,000,000	2,000,000	15,500,000
To promulgate modern plant health legislation	0	5,000,000	0	0	0	0	5,000,000
Strengthen technical and operational capacities	0	55,500,000	30,000,000	20,000,000	2,000,000	1,000,000	110,500,000
Facilitate the development of sys.spread and impact of alien pest species	0	124,600,000	20,200,000	21,000,000	26,200,000	18,300,000	222,600,000
Promote the use of GAPs and GMPs (post-harvest component)	500,000	46,900,000	19,200,000	43,000,000	33,800,000	23,100,000	183,500,000
To develop public education programmes	0	2,000,000	3,600,000	1,600,000	1,600,000	1,600,000	12,000,000
Facilitate research and development	0	18,600,000	20,000,000	17,000,000	17,000,000	15,000,000	100,600,000
Monitoring and evaluation of plant health system	0	1,125,000	300,000	300,000	300,000	300,000	3,000,000
Subtotal	500,000	262,925,000	105,800,000	114,900,000	87,900,000	62,300,000	681,900,000
Contingencies	50,000	26,292,500	10,580,000	11,490,000	8,790,000	6,250,000	68,190,000

7.0 APPENDICES

Appendix 1: Participants involved in developing the Project Plan Document

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8.0 GLOSSARY

Alien pest species	Introduced species (also called "non-indigenous" or "non-native") that adversely affect the habitats and bioregions they invade economically, environmentally, and/or ecologically.
Accreditation	A process in which certification of competency, authority, or credibility is presented.
Emergency action	A prompt phytosanitary action undertaken in a new or unexpected phytosanitary situation [ICPM, 2001]
Eradication	Application of phytosanitary measures to eliminate a pest from an area [FAO, 1990; revised FAO, 1995; formerly eradicate]
Establishment	Perpetuation, for the foreseeable future, of a pest within an area after entry [FAO, 1990; revised FAO, 1995; IPPC, 1997;
Exotic	Not native to a particular country, ecosystem or ecoarea (applied to organisms [ISPM No. 3, 1996]
Germplasm	Plants intended for use in breeding or conservation programmes [FAO, 1990]
Inspection	Person authorized by a National Plant Protection Organization to discharge its functions [FAO, 1990]
International Standard for Phytosanitary Measures	An international standard adopted by the Conference of FAO, the Interim Commission on phytosanitary measures or the Commission on phytosanitary measures, established under the IPPC

[CEPM, 1996; revised CEPM, 1999]

Introduction

The entry of a pest resulting in its establishment [FAO, 1990; revised FAO, 1995;

In vitro

In vitro studies are those that are conducted using components of an organism that have been isolated from their usual biological surroundings in order to permit a more detailed or more convenient analysis than can be done with whole organisms

Legislation

Any act, law, regulation, guideline or other administrative order promulgated by a government [ISPM No. 3, 1996]

National Plant Protection Organization

Official service established by a government to discharge the functions specified by the IPPC [FAO, 1990]

MRLs

The maximum amount of residue legally permitted on food

Organism

Any biotic entity capable of reproduction or replication in its naturally occurring state [ISPM No. 3, 1996; revised ISPM No. 3, 2005]

Pest

Any species, strain or biotype of plant, animal or pathogenic agent injurious to plants or plant products [FAO, 1990; revised FAO, 1995; IPPC, 1997]

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

	[FAO, 1995]
Pest outbreak	A sudden increase in a pest population resulting in economic damage to the crop
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 [FAO, 1995; revised IPPC, 1997; ISPM No. 2, 2007]
Phytosanitary authority	Any official responsible for implementing phytosanitary measures including the performance of inspections, tests, surveillance or treatments in connection with regulated pests
Plant quarantine	All activities designed to prevent the introduction and/or spread of quarantine pests or to ensure their official control [FAO, 1990; revised FAO, 1995]
Surveillance	An official process which collects and records data on pest occurrence or absence by survey, monitoring or other procedures [CEPM, 1996]
Survey	An official procedure conducted over a defined period of time to determine the characteristics of a pest population or to determine which species occur in an area [FAO, 1990; revised CEPM, 1996]

