

PHYTOSANITARY CAPACITY DEVELOPMENT STRATEGY FOR ETHIOPIA

Enhancing the NPPO's service delivery to safeguard agriculture and enable safe trade



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Ethiopian Agricultural Authority

STDF

STANDARDS and TRADE
DEVELOPMENT FACILITY



International Plant Protection Convention
Protecting the world's plant resources from pests



Food and Agriculture
Organization of the
United Nations

PHYTOSANITARY CAPACITY DEVELOPMENT STRATEGY FOR ETHIOPIA

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Abbreviations

AFAOR	Assistant Food and Agriculture Organization Representative
AI	Artificial Intelligence
AVRDC	Asian vegetable Research and Development Center
BCA	Biological Control Agent
BoA	Bureau of Agriculture
BP	Border Posts
CABI	Centre for Agriculture and Bioscience International
CGIAR	CGIAR
COLEAD	Committee Linking Entrepreneurship-Agriculture-Development
COMESA	Common market eastern and southern Africa
DDG	Deputy Director General
DHL	Dalsey, Hillblom, and Lynn
DISC	Database, information and communication system
DNA	Deoxyribose Nucleic Acid
EAA	Ethiopian Agricultural Authority
EAC	East African Community
EIA	Environmental Impact Assessment
EIAR	Ethiopian Institute of Agricultural Research
EMS	Express Mailing Service
EPOSEA	Ethiopian Pulses and Oilseeds Exporters Association
ER	Emergency Response
ETB	Ethiopian Birr
ETH	Ethiopia
ETR	Education, Training, and Research
FAO	Food and Agriculture Organization
FAOET	Food and Agriculture Organization Ethiopia Office
FAOR	Food and Agriculture Organization Representative
FAOSFE	Food and Agriculture Organization Subregional Office for Eastern Africa
FAW	Fall armyworm

FPOS	Fit-for-Purpose Organizational Structure
FR	Financial Resource
FSRP	Food Systems Resilience Program
GDP	Gross Domestic Product
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit
HACCP	Hazard Analysis Critical Control Point
HLI	Higher Learning Institute
HPPRS	Harmonization of Phytosanitary Procedures among Regional States
HR	Human Resource
HRCD	HRCD
I	Infrastructure
IAS	Invasive Alien Species
Icipe	International Center for Insect Physiology and Ecology
ICT	Information Communication Technology
IDCD	Infrastructural and Digital Capacity Development
IGAD	Intergovernmental authority for development
IPM	Integrated Pest Management
IPO	Input Process and Output model
IPPC	International Plant Protection Convention
ISPM	International Sanitary and Phytosanitary Measures
IT	Information Technology
IUCN	International Union for Conservation of Nature
KEPHIS	Kenyan Plant Health Inspectorate Service
LEO	Lead Executive Office
LMO	Living Modified Organism
MEL	Monitoring Evaluation and Learning
MLND	Maize Lethal Necrosis Disease
MoA	Ministry of Agriculture
NAPMIS	National Agricultural Projects Management Information System
NARS	National Agricultural Research Secretariate
NPPO	National Plant Protection Organization
PC	Phytosanitary certification
PCE	Phytosanitary Capacity Evaluation

PFA	Pest Free Area
PIMS	Pest Information Management System
PPG	Project Preparation Grant
PPSE	Plant Protection Society of Ethiopia
PQ Plant Quarantine	Plant Quarantine
PQR	Plant Quarantine Regulators
PRA	Pest Risk Analysis
PSC	Phytosanitary Certificate
PSL	Policy, strategy, and legislation
QCA	Quality Control and Audit
QMS	Quality Management system
RASFF	Rapid Alert System for Food and Feed
RBOA	Regional Bureau of Agriculture
SCPOC	Strengthening Core Phytosanitary Operational Capacity
SFE	Subregional office for Eastern Africa
SFPO	Sustainable Financing of Phytosanitary Operations
SLRI	Strengthening Legal and Regulatory Instruments
SOP	Standard operating procedures
SPC	Structural organization, process, and coordination
SPS	Sanitary and Phytosanitary Standards
STDF	Standards and Trade Development Facility
SWOT	Strength, Weakness, Opportunity and Threat
TCP	Technical Cooperation Project
TIN	Tax Identification Number
UN	United Nations
UPS	United Parcels Service
USD	United States Dollar
VAT	Value Added Tax
WP	Working procedures
WTO	World Trade Organization

Joint foreword

A robust phytosanitary system is fundamental to Ethiopia's agricultural productivity, environmental sustainability, and global trade competitiveness. Today, Ethiopia's agricultural sector stands at a critical juncture, facing the dual challenge of expanding international trade and the growing threat of plant pests. Safeguarding plant health is no longer optional; it is a strategic imperative to protect agricultural resources, sustain rural livelihoods, preserve biodiversity, and ensure food security.

Efforts to enhance Ethiopia's phytosanitary capacity began in June 2016, when the Ministry of Agriculture's (MOA) Pest Management Support Service (PMSS) strategy, which identified ten key issues requiring urgent and strategic action, including inadequate phytosanitary services and a limited government focus on invasive alien species. However, key activities such as pest risk analysis, import certification, post-entry quarantine, and surveillance of new pests were not given enough priority. This gap allowed numerous quarantine pests to establish and spread—among them *Parthenium* weed, water hyacinth, *Prosopis*, and regulated pests like fall armyworm, *Tuta absoluta*, and maize lethal necrosis disease, causing severe ecological and economic damage. Frequent export rejection due to pest contaminations further undermined Ethiopia's trade performance.

To address these challenges and build a resilient agricultural regulatory system, the National Plant Protection Organization (NPPO) was

established under the Ethiopian Agricultural Authority (EAA) in 2022. However, as a young and newly established organization, the NPPO faced capacity constraints which limited the effectiveness of its operations. Recognizing the importance of adopting internationally recognized standards to protect Ethiopia's phytosanitary system, the EAA rolled out the International Plant Protection Convention (IPPC) Phytosanitary Capacity Evaluation (PCE) tool in 2024.

Such initiative was possible thanks to the support of the Standards and Trade Development Facility (STDF) through a Project Preparation Grant titled "Evaluating Ethiopia's phytosanitary capacity" (STDF/PPG/945) and a Technical Cooperation Programme (TCP/ETH/4003) "Strengthening the operational capacity of the newly formed Ethiopian Agricultural Authority" from the Food and Agriculture Organization of the United Nations (FAO).

The PCE process, conducted between November 2024 and September 2025, involved 43 stakeholder institutions and assessed systemic, organizational, and operational capacities across 13 modules. This inclusive approach identified both strengths and weaknesses, fostering targeted action planning and stronger national engagement. Based on the PCE findings, Ethiopia developed its first standalone and comprehensive National Phytosanitary Strategy, aligning with broader development goals, including enhanced trade and improved livelihoods for agricultural producers.

We extend our sincere gratitude to EAA, FAO, the IPPC Secretariat, the STDF, and all national stakeholders whose commitment made this strategy possible. Their collaboration ensures Ethiopia is well-positioned to strengthen its phytosanitary system, manage emerging pest risks, and facilitate safe trade. Through continued partnership, Ethiopia aims to develop its agricultural sector, expand market access, enhance rural livelihoods and join the World Trade Organization (WTO) and has begun the process of accession.

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Preface

Phytosanitary services in Ethiopia have been provided for over six decades. Despite notable efforts to enhance these services, the system has struggled to meet rising demand due to inadequate institutional and technical capacity, a shortage of trained personnel and limited financial resources. As a result, the incidence, distribution and impact of new pests have increased significantly. Key contributing factors include insufficient technical knowledge and skills, weaknesses in service delivery and communication, and the lack of effective pest eradication programmes. These limitations have led to the frequent introduction, establishment and spread of new pests.

Recognizing these weaknesses, efforts are underway to strengthen Ethiopia's phytosanitary system. The development of this strategy represents a practical step in this direction. Initiated by the Ethiopian Agricultural Authority (EAA), a core team comprising stakeholders from EAA, the Ministry of Agriculture (MoA), higher learning institutions (HLIs), the Ethiopian Institute of Agricultural Research (EIAR), the FAO Subregional Office for Eastern Africa (SFE) and the FAO Ethiopia Office, the Ethiopian Horticulture Producers and Exporters Association (EHPEA), and the Ethiopian Pulses and Oilseeds Exporters Association (EPOSEA) successfully coordinated the strategy development process.

Participants used the 13 modules of the Phytosanitary Capacity Evaluation (PCE) tool to identify weaknesses and, through detailed discussion, pinpointed five key weaknesses for each module (except the first module, which profiles EAA). The weaknesses were considered individually for each module, and a problem analysis was conducted to define, for each module, the primary and secondary causes and their respective consequences.

Using the outputs of the problem analysis, separate strategic plans were generated for each module. These findings informed strategic plans at three levels: system (two modules), organizational (three modules) and phytosanitary activities (seven modules).

The task team conducted a thorough revision of Ethiopia's agricultural import and export history, alongside the effectiveness of existing phytosanitary measures and their implications. By consolidating the individual module plans, an overall strategic plan was developed.

This strategy includes the rationale, stakeholder engagement, a SWOT analysis, and the grouping of key weaknesses. Seven strategic objectives were established to address these weaknesses: human resource capacity development; enhancement of infrastructural and digital systems; establishment of fit-for-purpose organizational structure; strengthening of core operational capacity; sustainable financing; development of robust legal and regulatory instruments; and harmonization of phytosanitary procedures among regional states.

A system analysis using the Input-Process-Output (IPO) model was conducted to identify the inputs and enabling factors required to achieve the desired outcomes. Recognizing that not all aspects of the seven objectives can be addressed immediately, the most urgent interventions for the next five years were prioritized. These include capacity development, pest risk analysis, surveillance and monitoring, phytosanitary certification, control and eradication measures, and trade regulation.

The financial requirement for implementing these objectives is estimated at USD 21 million. The strategy also includes a logical framework outlining the seven objectives, 20 outputs, 55 activities and 248 sub-activities, together with estimated costs, responsible institutions and implementation timelines.

The risk analysis identifies key areas, including legislation, policy coherence, capacity, organizational structure, operational systems, financing and coordination, to guide future action.

The core task team would like to acknowledge key stakeholders who demonstrated strong commitment by making their technical staff available to participate in the series of meetings conducted and by providing valuable contributions to the development of the strategy. Above all, the concerted efforts of all stakeholders will be critical during the implementation of the strategy to achieve meaningful improvements in phytosanitary services in Ethiopia.

Strategy development core team

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Executive summary

The Phytosanitary Capacity Development Strategy for Ethiopia (2026–2030) presents a comprehensive roadmap to modernize Ethiopia's plant health system. The strategy's overarching vision is to build a trusted phytosanitary organization committed to safeguarding agriculture, the environment, and trade through science-based plant health regulation. It aims to transform the National Plant Protection Organization (NPPO), operating under the Ethiopian Agricultural Authority (EAA), into a proactive, efficient and internationally compliant institution, capable of preventing the introduction and establishment of regulated pests, while facilitating safe agricultural trade by maintaining robust import and export certification systems.

Ethiopia's agriculture-based economy depends heavily on plant production and export. However, over the last decade, the country has faced increasing pest outbreaks and export rejections due to weak phytosanitary systems. Established pests such as parthenium weed, prosopis, cotton mealybug, mango white scale, Tuta absoluta, fall armyworm and maize lethal necrosis disease have caused significant ecological and economic damage. The lack of a coordinated response, inadequate diagnostics, and insufficient inspection at points of entry and exit have left the country vulnerable to the introduction and establishment of new pests. Recognizing these threats, the Government of Ethiopia, with technical support from FAO and the Standards and Trade Development Facility (STDF), initiated and completed the development of this national phytosanitary strategy. The strategy aims to strengthen national phytosanitary capacity through systematic assessment, institutional reform and targeted capacity development.

To identify the root causes of weaknesses in the existing phytosanitary system and define strategic actions, Ethiopia implemented the International Plant Protection Convention (IPPC) Phytosanitary Capacity Evaluation (PCE) tool. This diagnostic process, conducted from November 2024 to September 2025, assessed the national phytosanitary system across the 13 PCE modules, which evaluate the NPPO's institutional framework, organizational structure and core functional capacities. The evaluation engaged experts from 43 institutions, including government ministries, regional bureaus, universities, research centres and private sector stakeholders. The process produced the first comprehensive assessment of Ethiopia's phytosanitary system and identified the principal weaknesses constraining its effective functioning and transformation.

Based on the identified weaknesses, separate strategic action plans were developed for the 12 PCE modules and subsequently consolidated into a single national strategic plan for 2026-2030. Ethiopia lacks a comprehensive legal framework governing phytosanitary procedures and emergency response mechanisms. Human resources capacity within the NPPO is critically limited: only 39 experts currently serve in positions that require an estimated 400 qualified staff. Laboratory infrastructure and surveillance capacity are underdeveloped, and pest diagnostics depend on research institutions not designed to provide rapid regulatory diagnostics. Additionally, the system lacks digital information-sharing platforms, standard operating procedures (SOPs), and harmonized protocols between federal and regional agencies. Collectively, these gaps reduce Ethiopia's capacity to prevent new pest incursions and respond effectively to biosecurity threats.

The key strategic objectives aimed at addressing the identified key weaknesses at the system, organizational and core operational levels include: human resource capacity development; infrastructural and digital capacity development; fit-for-purpose organizational structure; strengthening core phytosanitary operational capacity; sustainable financing of phytosanitary operations; strengthening legal and regulatory instruments; and harmonization of phytosanitary procedures among regional states.

These findings provided the foundation for designing a five-year (2026–2030) evidence-based strategic plan. Therefore, guided by its mission to enhance NPPO service delivery to safeguard agriculture and enable safe trade, the strategy aligns with Ethiopia's broader agricultural transformation agenda and its aspirations

to join the World Trade Organization (WTO). It establishes a results-oriented framework that bridges regulatory, technical and institutional gaps through coordinated action. The strategy promotes science-based regulation, transparency and international collaboration in line with the IPPC and WTO Sanitary and Phytosanitary (SPS) Agreement. It also emphasizes sustainability, inclusivity and interagency coordination as key principles guiding implementation.

The strategy outlines a set of practical interventions to operationalize these objectives. Key priorities include the development of a Centralized Phytosanitary Information Management System; the establishment of pest diagnostics and surveillance laboratories; the integration of phytosanitary modules into agricultural university curricula; and the launch of training programmes for NPPO staff. The strategy also calls for the revision of the national phytosanitary proclamation, the adoption of SOPs aligned with ISPM and upgrading of inspection posts with modern equipment and facilities. In addition, mechanisms for pest risk analysis, pest-free area management, and export traceability will be institutionalized to reduce risks of export rejections in international markets.

The implementation framework assigns responsibilities to multiple institutions under the leadership of the EAA. Federal ministries, regional bureaus of agriculture, research institutes, universities and development partners will collaborate in a coordinated system. The estimated financial requirement for the strategy is **USD 21 million over five years**, to be mobilized through national budget allocations, development partner support and private sector participation. A logical framework matrix

defines 20 expected outputs and 55 activities, each supported by indicators, timelines and responsible institutions. Sustainable financing mechanisms, including provisions for retention and utilization of self-generated revenue, are also prioritized to support long-term operational sustainability. To strengthen institutional effectiveness and responsiveness, the strategy proposes a revised organizational structure for EAA, accompanied by a detailed organogram. In addition, the roles and responsibilities of key government institutions involved in the implementation of this strategy are clearly defined to ensure accountability and effective coordination.

To ensure accountability and continuous improvement, a robust monitoring, evaluation and learning (MEL) system has been integrated into the strategy. Progress will be tracked using performance indicators linked to strategic objectives, with annual reviews and midterm evaluations. The strategy also includes a risk management framework addressing potential challenges such as insufficient funding, weak interagency coordination, policy changes and emerging pest threats. Proactive communication, institutional audits and adaptive management will ensure the strategy remains relevant throughout its implementation.

By 2030, Ethiopia aims to have a fully functional, technically competent NPPO capable of protecting national agriculture, ensuring compliance with international phytosanitary standards, and supporting export diversification. The implementation of this strategy will reduce new pest incursions, minimize export rejections, improve food security and strengthen Ethiopia's competitiveness in regional and global markets. Ultimately, the strategy envisions a resilient phytosanitary system that safeguards Ethiopia's agricultural economy, protects biodiversity and contributes to sustainable development and trade growth.

PHYTOSANITARY CAPACITY DEVELOPMENT STRATEGY FOR ETHIOPIA

VISION

A trusted phytosanitary organization committed to safeguarding agriculture, the environment and trade through science-based plant health regulation.



MISSION

To strengthen the service delivery of the National Plant Protection Organization (NPPO) in order to safeguard agriculture and facilitate safe agricultural trade.

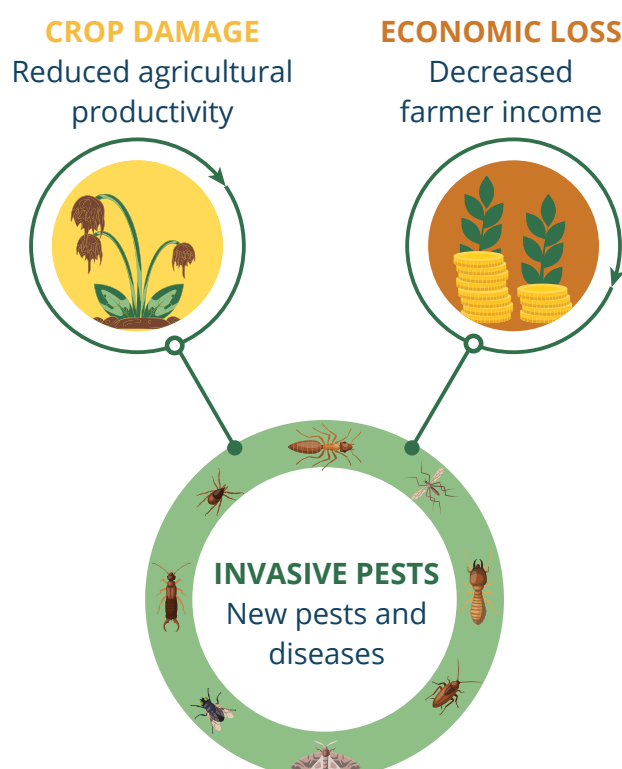
Country context

AGRICULTURAL IMPORT SITUATION

Globalization has substantially increased the international movement of plants, plant products and other regulated articles, including in Ethiopia. Over the past seven years, up to mid-2025, a total of 613 981 metric tonnes of various agricultural commodities have been officially recorded as imports into the country.

These imports include a wide range of **planting materials**, such as flower cuttings for direct planting and re-export, vegetable seeds (including tomato, cabbage, spinach and onion), carrot, strawberry seedlings, grafted avocado and apple seedlings, and tissue-culture-derived banana plantlets. In addition, various **fresh fruits and vegetables** have been imported, including oranges, apples, blackberries, blueberries and onions, as well as pulses such as lentils.

INVASIVE PESTS THREATEN ETHIOPIAN CROPS



Substantial quantities of **food commodities** intended for consumption have also been imported, including wheat, maize and lentils provided as food aid, as well as malt barley for brewery industries. Furthermore, **plant growing media** and other agricultural inputs have been imported to support domestic agricultural production.

The movement of these diverse commodities raises significant phytosanitary concerns, as they may facilitate the introduction and spread of plant pests. This risk is compounded by the limited number of phytosanitary inspection posts at border entry points and the restricted capacity of the national system to implement effective phytosanitary measures. As a result, several exotic and previously unrecorded pests have been introduced and have become established in new agro-ecological zones across the country. These developments highlight the urgent need to strengthen import regulation, inspection services and diagnostic capacity within Ethiopia's phytosanitary system to protect plant health and agricultural productivity.

Over the past ten years, Ethiopia has faced the introduction and establishment of several major **plant pests, diseases and invasive plant species**, which have caused significant economic and ecological damage. These include the cypress aphid (*Cinara cupressivora*), first reported in 1999; carmine cochineal (*Dactylopius coccus*) in 2001; cotton mealybug (*Phenacoccus solenopsis*) on cotton in 2010; the South American tomato fruit worm (*Tuta absoluta*), detected in 2013; and maize lethal necrosis disease (MLND) on maize, first reported in 2012.

More recently, Ethiopia has been affected by the fall armyworm (*Spodoptera frugiperda*), detected in 2016; mango white scale (*Aulacaspis tubercularis*), reported in 2006; and the avocado mite (*Oligonychus perseae*), detected in 2024. Other important plant diseases include ginger bacterial wilt (*Ralstonia solanacearum*), detected in 2006 and black Sigatoka (*Mycosphaerella fijiensis*) reported in 2023.

Several invasive weeds and parasitic plants have become established in the country, including the parasitic weed *Orobanche crenata* (2008); parthenium weed (*Parthenium hysterophorus*), first recorded in 1987; water hyacinth (*Eichhornia crassipes*); golden crown beard (*Verbesina encelioides*) in 2004; and mesquite (*Prosopis juliflora*), introduced in the late 1970s.

AGRICULTURAL EXPORTS SITUATION

Since 2021, Ethiopia has exported a total of **6 614 543 metric tonnes of agricultural commodities** to various international markets. These exports included oilseeds and a diverse range of pulses, such as white pea beans, common beans, red kidney beans, mung beans, soybeans, chickpeas, sesame, peanuts, black cumin seed and coriander.

In addition, Ethiopia exports a variety of horticultural products, including strawberries, tomatoes, bananas, oranges, roses, cut flowers and other plant cuttings. These commodities were shipped to multiple destinations worldwide, including the European Union, the United Kingdom of Great Britain and Northern Ireland, China, India, Pakistan, Japan, the Russian Federation and the United States of America, as well as South American countries such as Ecuador and El Salvador and Middle Eastern markets including Saudi Arabia, Israel and the United Arab Emirates.

Despite the growth in agricultural exports, Ethiopia faces several challenges in ensuring compliance with international phytosanitary requirements. The limited implementation of crop value chain management and traceability systems, combined with weak inspection and certification procedures, has constrained the effective delivery of phytosanitary services.

As a result, importing countries have issued a number of phytosanitary non-compliance notifications between 2023 and 2025. These included 68 cases involving consignments without a valid Phytosanitary Certificate (PSC) or with expired certificates, eight cases where the PSC contained incomplete or false information, 89 cases of shipments with prohibited plant materials and/or undeclared goods, and 68 cases related to non-compliance with international standards for wood packaging materials, such as the absence of internationally recognized markings.

Between 2015 and mid-2025, data reported through the European Union's EUROPHYT interception notification system indicate that consignments originating from Ethiopia were associated with a total of 154 pest interceptions involving harmful organisms. These interceptions concerned a variety of regulated quarantine pests in the importing countries, including *Liriomyza* spp., *Helicoverpa* spp., thrips

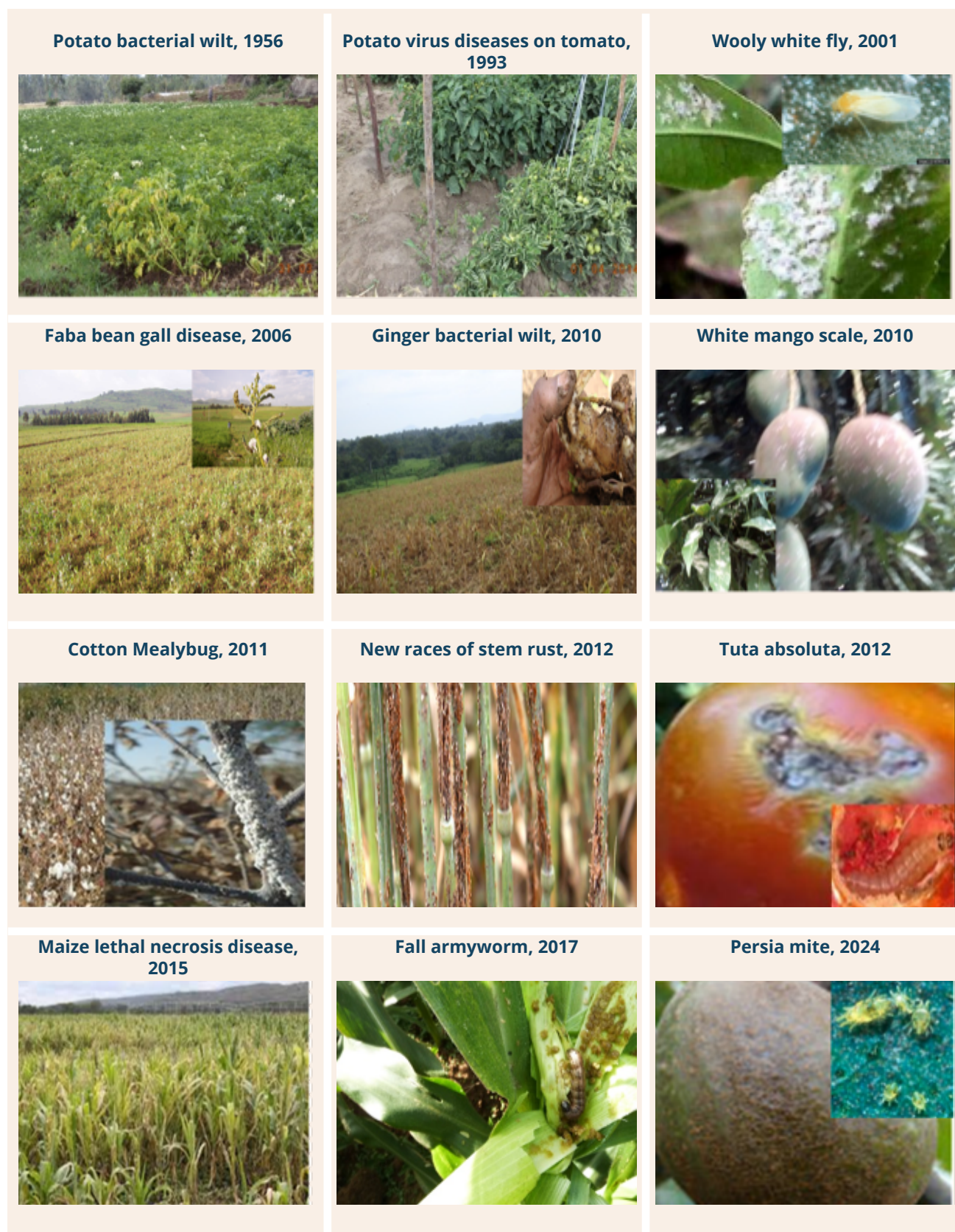
(*Thysanoptera*), *Bemisia tabaci* (silverleaf whitefly), and *Spodoptera* spp. (armyworms), *Tephritidae* (fruit flies), *Dacus* spp., and *Thaumatotibia leucotreta* (false codling moth).

Such interceptions frequently resulted in the rejection, destruction or refusal of entry of consignments into the importing markets. The repeated detection of quarantine pests highlights critical weaknesses in Ethiopia's phytosanitary system, particularly in relation to export certification, pest risk management, regulatory enforcement and product traceability systems. Addressing these gaps is essential to ensure consistent compliance with international trade and phytosanitary standards.

Despite longstanding recognition of weaknesses within Ethiopia's phytosanitary system, the country's phytosanitary capacity had not previously been comprehensively assessed using the IPPC Phytosanitary Capacity Evaluation (PCE) tool. To address this gap, the Ethiopian NPPO sought support from the Standards and Trade Development Fund (STDF). With financial support from the STDF and technical assistance from FAO, a comprehensive evaluation of the national phytosanitary system was conducted and a Phytosanitary Capacity Development Strategy for 2026–2030 was subsequently developed.

FIGURE 1.

Examples of introduced and established pests in Ethiopia (1956–2024)



Justification

In today's highly interconnected world, the movement of plants and plant products has increased significantly, raising the risk of pest introductions and trade disruptions. For Ethiopia, an agriculture-driven country with rapidly expanding export markets, this situation presents growing phytosanitary challenges.

Effective legal, regulatory and technological systems are required to monitor and control agricultural products throughout the supply chain, from production to inspection, certification and export. However, gaps in these systems continue to constrain the effective implementation of phytosanitary measures. In addition, limited coordination with regional economic communities has restricted opportunities for the harmonization and mutual recognition of phytosanitary standards, thereby limiting the expansion of trade opportunities. To proactively address these risks, Ethiopia conducted a Phytosanitary Capacity Evaluation (PCE) using the IPPC diagnostic tool.

The evaluation, based on the **13 modules of the PCE tool**, revealed significant weaknesses, gaps and challenges in the institutional, technical and operational capabilities of the current phytosanitary system. These issues prevent the system from meeting domestic and international phytosanitary standards. The PCE findings show limited pest surveillance and diagnostic abilities, failure to designate pest-free areas for key export commodities of plant origin, inadequate export certification, outdated and incomplete legal frameworks that do not align with international standards, poor coordination among agencies, limited stakeholder involvement, and a

lack of readiness for pest emergency responses. The assessment also identifies the absence of a structured programme for conducting pest risk analysis (PRA). These problems are largely linked to the absence of a clear strategic framework. Plant health interventions have often been fragmented, reactive and insufficiently coordinated. This situation underscores the urgent need for a comprehensive strategic plan to address the weaknesses identified by the PCE and to enhance the functioning of Ethiopia's phytosanitary system.

This strategy is essential not only for improving the national plant health system, but also as a key element of Ethiopia's broader biosecurity framework. Plant pests and diseases caused by pathogens threaten food security, farmers' livelihoods and biodiversity. Therefore, by strengthening phytosanitary capacity, Ethiopia will be better positioned to prevent pest invasions and protect agricultural products, supporting economic growth and stability.

As a contracting party to the International Plant Protection Convention (IPPC) and an aspiring member of the World Trade Organization (WTO), Ethiopia is committed to adopting and implementing science-based, transparent and harmonized phytosanitary measures. This

strategy helps Ethiopia fulfill its obligations to global organizations by minimizing the risk of export rejections and expanding access to competitive markets. In addition, the establishment of a national phytosanitary strategy provides a coordinated, goal-driven roadmap for targeted, time-bound investments, more efficient use of resources, and enhanced technical and institutional collaboration.

Ultimately, this strategy marks the next crucial phase in Ethiopia's phytosanitary capacity development process, aimed at strengthening the

country's ability to produce and export high-quality commodities while ensuring the effective regulation of agricultural imports. If the PCE served as the diagnostic assessment of the country's phytosanitary system, the strategy provides the strategic framework for intervention, translating the findings of the evaluation into practical, measurable interventions. Through these interventions, Ethiopia seeks to build a more proactive, resilient and effective phytosanitary system for the future.



Traditional avocado fruits marketplace where harvests are often improperly handled

Methodology

The initiative to assess Ethiopia's phytosanitary capacity was first launched in 2019 by FAO-SFE during the drafting of the phytosanitary proclamation. This effort was renewed in 2023, led by the Ethiopian Agricultural Authority (EAA), which submitted a request for a project preparation grant (PPG) to the STDF and sought formal access to the Phytosanitary Capacity Evaluation (PCE) tool. The IPPC Secretariat subsequently granted the EAA official access to the PCE tool.

The STDF provided a PPG of USD 50 000, while additional financial support was mobilized through the FAO Technical Cooperation Programme project TCP/ETH/4003. Following the mobilization of financial resources, the PCE process was implemented in two main phases: the inception phase and the execution phase.

During the inception phase, key stakeholders were identified, mapped and convened. An inception meeting was held on 19–20 November 2024, during which the results of Module 1 (Country Profile) of the PCE were reviewed and validated. In order to enhance stakeholders' understanding of the purpose and methodology of the PCE process, participants were introduced to and engaged in the application of Module 5 (NPPO Structure) and Module 6 (NPPO Resources).

During the execution phase, a series of technical workshops were held in 2025 to address the assessment of the remaining 10 PCE modules. The second workshop took place from 20–26 January 2025, followed by the third workshop from 5–8 March 2025, and the fourth workshop from 23–26 April 2025. The fifth and final workshop, aimed at consolidating the PCE results, was conducted from 18–22 May 2025.

In parallel, between November 2024 and June 2025, twelve separate strategic action plans were developed through desk-based work by two national consultants, with direct technical support from the international PCE consultant and the SFE crops team leader. To validate and consolidate the twelve strategic plans, a follow-up technical meeting was held from 9–13 June 2025.

Based on the consolidated outputs, the first draft of the national phytosanitary strategic plan was produced and reviewed by invited technical experts during a workshop held from 14–17 July 2025 in Addis Ababa. Following this review, national experts further refined the document and prepared an advanced draft for presentation at the national validation workshop and for subsequent endorsement by EAA and FAO.

Analysis of stakeholders of Ethiopia's phytosanitary system

The PCE identified 42 key stakeholders involved in Ethiopia's phytosanitary system. The stakeholders were assessed based on their level of influence, which was categorized as high, medium, or low.

The analysis shows that the 25 stakeholders have both high impact and high influence on Ethiopia's phytosanitary system. In addition, five stakeholders were identified as having high impact but medium influence, while 15 stakeholders demonstrate medium level of both impact and influence. A smaller number of stakeholders, six, were rated as having medium to low or low level of impact and influence. Overall, 64 percent of the 39 key stakeholders have both high impact and high influence within the phytosanitary system.

These findings highlight the importance of establishing a structured consultation platform to discuss the current situation and provide recommendations to strengthen Ethiopia's phytosanitary system. Furthermore, the organization of an annual stakeholder meeting is recommended to bring together relevant institutions to review progress in the implementation of the phytosanitary capacity development strategy. Such mechanism will contribute to strengthening phytosanitary governance while supporting safe international trade, sustainable agricultural production and the protection of biodiversity and ecosystems.

TABLE 1.

Stakeholders in Ethiopia's phytosanitary system and their potential impact and influence on the implementation of the strategy.

No.	Stakeholder	Stakeholder interest/role	Impact	Influence
1	Council of Ministers	→ Endorses proposed legislation and submits it to the House of Representatives.	High	High
2	House of People's Representatives	→ Approves legislation.	High	High
3	Prime Minister's office	→ Endorses proposed legislation and submits it to the Council of Ministers.	High	High
4	Ministry of trade and regional integration	→ Facilitation of safe trade.	High	Medium
		→ Oversees and coordinates import license.	High	High
		→ Oversees agency agreements.		
		→ Issues tax identification number (TIN) certificates.		

No.	Stakeholder	Stakeholder interest/role	Impact	Influence
5	Civil service authority	→ Approves organizational structures, job titles, staffing positions, career development and salary scales.	High	High
6	Ministry of Finance	→ Determines service fee rates and oversees revenue collection. → Decision on the release of capital and operational budget on an annual basis. → Leads bilateral and multilateral negotiations to mobilize financial resources (e.g. World Bank, FAO grants). → Allocates national budgets for contingency, surveillance and pest eradication programmes.	High	High
7	Ministry of Justice	→ Reviews, promulgates and ratifies legal documents and regulatory instruments.	High	Medium
8	Policy Studies Institute	→ Conducts policy analyses and provides evidence-based information to support policy development.	Medium	Low
9	Ministry of planning and development	→ Approves long-term, mid-term and short-term plans. → Capacity building of public service staff.	High	High
10	Public procurement and property authority	→ Facilitates and approves local and international procurement. → Regulates the procurement and disposal of public goods.	High	High
11	Ethiopian Statistical Service	→ Generates, stores, processes, and shares statistical data (including a wide array of agricultural-related information).	Medium	Medium
12	Ethiopian Agricultural Authority	→ Implements SPS policies. → Provides plant, animal and food safety quarantine and regulatory services. → Oversees and coordinates phytosanitary functions as the NPPO. → Issues import authorization and export certification. → Procures equipment and operational supplies. → Conducts post-entry quarantine monitoring and inspections on production sites. → Maintains a registry of enterprises dealing with plants or plant products, including seeds. → Oversees phytosanitary treatment of consignments. → Advises and supervises the disposal of plant and plant products. → Manages diagnostic laboratories. → Develops priority quarantine pest lists and regulated non-quarantine pest lists based on PRA. → Maintains and updates national pest diagnostic databases.	High	High

No.	Stakeholder	Stakeholder interest/role	Impact	Influence
13	Ministry of Agriculture	→ Proposes legislation and policy for plant pest management. → Avails resources for plant protection. → Refurbishes laboratory facilities and maintains their operation. → Promotes private sector engagement in plant protection. → Updates regulatory tools (legislation) for the phytosanitary system. → Screens draft legislation (proclamation and regulation). → Approves directives and strategy.	High	High
14	Plant Protection Directorate of the Ministry of Agriculture	→ Implements pest control legislation and policy. → Mobilizes resources, including funding and equipment. → Supports phytosanitary service provision, including prevention, containment, eradication and pest management. → Supports transboundary pest management programmes. → Provides technical support for healthy plant production to facilitate safe trade and environmental protection.	High	High
15	Agricultural Research Institutes	→ Conduct research, diagnosis and capacity development. → Support pest identification and determination of emerging threats. → Support Pest Risk Analysis. → Support training and awareness creation programmes on eradication methods for averting new pest threats. → Develop and validate pest diagnostics and surveillance protocols and methodologies. → Manage post-entry quarantine for plants imported for research. → Maintain national pest and natural enemy databases in coordination with the EAA.	High	High
		→ Support pest surveillance, identification and information sharing, and recommend control technologies.	Medium	Medium
16	Higher Learning Institutions	→ Conduct research, diagnosis and capacity development. → Maintain national pest and natural enemy databases in coordination with the EAA.	High	High
		→ Provide pest control services for migratory pests.	High	Medium

No.	Stakeholder	Stakeholder interest/role	Impact	Influence
17	Higher Learning Institutes	→ Train graduates in pest surveillance, diagnostics, eradication, containment, and sustainable management. → Conduct long-term research on ecological suitability for new pest threats → Conduct pest surveillance, identification, and information sharing, and recommend control technologies	Medium	Medium
18	CGIAR centres	→ Research, diagnosis and capacity development.	High	High
19	NGOs and international organizations (including among others AVRDC, CABI, FAO, GIZ, ICIPE)	→ Provide technical assistance for pest eradication procedures. → Facilitate awareness creation among communities. → Promote new pest eradication programmes. → Provide financial support to pest management initiatives.	High	High
20	Environmental Protection Authority	→ Proposes environmental policies, legislation, strategies and guidance. → Outsources EIAs to licensed service providers. → Reviews pest management treatments for compliance with environmental standards.	Medium	Medium
21	Disaster Risk Management Commission	→ Mobilizes resources during pest outbreaks (e.g. locust swarms). → Coordinates emergency response teams.	High	High
22	Authorized private service providers	→ Support phytosanitary diagnostic activities. → Perform phytosanitary treatments.	High	High
23	Private companies, producers, consumers, investors (export/import)	→ Apply for registration of plants or plant products, including seeds and other agricultural inputs. → Comply with phytosanitary and customs requirements for import and export. → Allow regular monitoring of their imports and exports by the EAA. → Comply with EAA decisions for safe disposal, return to origin or re-export or destruction of imports that have phytosanitary issues. → Packing list of imports. → Present for approval the bill of lading/airway bill.	Low	Low
		→ Report the occurrence of new pests and participate in wider awareness creation. → Eradicate populations of new pests in and around their farms and premises. → Carry out regular monitoring until complete eradication of the new pest is done.	High	Medium
		→ Report occurrence of unknown pests to BoA.	Low	Low

No.	Stakeholder	Stakeholder interest/role	Impact	Influence
24	Plant Health Clinics	→ Conduct crop pest surveillance, identification and information sharing.	High	High
		→ Crop surveillance for pests of quarantine significance.	Medium	Medium
		→ Protection of rangelands, environmentally protected areas (parks) and uncultivated areas.		
		→ Follow-up of imported plants at sites of production. → Sample collection and limited processing for diagnostics.		
25	Regional Bureau of Agriculture	→ Enforces quarantine controls at regional borders. → Sets a contingency plan for pest eradication programmes. → Conducts pest eradication programmes in collaboration with key stakeholders to ensure compliance with established environmental safety standards. → Delivers extension services (training, field demonstrations).	High	High
		→ Provides pest control and management services at the regional level.	Medium	Medium
26	Regional Regulatory Authorities	→ Crop surveillance for pests of quarantine significance. → Protection of rangelands, environmentally protected areas (parks), and uncultivated areas. → Follow-up of imported plants at sites of production.	High	High
		→ Provide plant quarantine and regulatory services at the regional level.	Medium	Medium
27	Ethiopian Biodiversity Institute	→ Conducts diagnosis of invasive pest species.	Medium	Medium
		→ Partners with IUCN to strike a balance between eradication and biodiversity conservation.	Medium	Low
28	Ethiopian Coffee and Tea Authority	→ Carries out pest eradication programmes in its sphere of influence. → Implements eradication methods that do not jeopardize the export of coffee and tea products. → Facilitates knowledge transfer to farmers on new pest threats. → Conducts pest surveillance, identification and information sharing, and recommends control technologies.	Medium	Medium
29	Ethiopian Sugar Corporation research team	→ Conducts pest surveillance, identification and information sharing, and recommends control technologies. → Carries out pest eradication programmes in its sphere of influence. → Implements eradication methods that do not jeopardize the export of coffee and tea products. → Facilitates knowledge transfer to farmers on new pest threats.	Medium	Medium

No.	Stakeholder	Stakeholder interest/role	Impact	Influence
30	Ministry of Irrigation and Lowlands	→ Offers technical engineering services for irrigation and water management.	Medium	Medium
31	Food Systems Resilience Programme	→ Provides resources for strengthening phytosanitary laboratory infrastructure. → Provides resources for targeted capacity building. → Supports workshops and events on specific phytosanitary issues.	Medium	Medium
32	Associations and Societies (PPSE, CSSE, EHPEA, etc)	→ Provide technical support. → Facilitate wider awareness creation among communities. → Promote compliance with new pest eradication programmes and measures. → Financially support pest diagnostics. → Conduct research and capacity building.	Medium	Medium
33	Ethiopian Customs Authority	→ Process customs import declarations. → Verifies pre-shipment inspection clearance reports. → Issues and manages transit documentation. → Verifies value added tax (VAT) certificates.	High	High
		→ Facilitates coordination with regulatory authorities through the national single-window system.	Low	Low
34	Local Banks	→ Process commercial invoices. → Provide foreign exchange authorization for import and export translations. → Issue bank permits, as required. → Provide credit and loan services.	Low	Low
35	Chamber of Commerce	→ Issues certificates of origin for exported goods.	High	High
36	Ethiopian Airlines	→ Provides aerial services for surveillance and pesticide application when required. → Complies with EAA decisions on disposal or return of consignments with phytosanitary risks. → Supports implementation of phytosanitary measures for e-commerce consignments.	High	High
37	Ministry of Defence	→ Provides security in conflict zones to enable pest control operations.	High	High
38	National Intelligence and Security Service (NISS)	→ Supports predictive analysis of emerging pest threats using advanced analytical tools in coordination with EAA. → Utilizes satellite and drone surveillance for early warning systems.	High	Medium

No.	Stakeholder	Stakeholder interest/role	Impact	Influence
39	Insurance Companies	→ Issue insurance certificates.	Low	Low
40	Courier service providers (Ethio Post-EMS, DHL, and UPS)	→ Facilitate the shipment and delivery of consignments requiring special handling (e.g. soil samples, plants, plant materials, microorganisms, plant DNA and laboratory materials).	High	High
41	Ethiopian Agricultural Business Corporation	→ Timely and adequate supply of agricultural inputs (pesticides, pheromones, traps, lab supplies, and field equipment for surveillance, diagnostics, eradication and export certification).	High	High
42	Regional Seed Enterprises	→ Implementation of phytosanitary standards during seed multiplication. → Prevention of pest spread through seed systems. → Compliance with inspection and certification requirements. → Pest occurrence reports from seed farms. → Traceability information (source, movement, buyers). → Reporting unusual pest occurrence. → Participating in coordinated pest management campaigns. → Support for PRA and post-certification monitoring.	High	Medium
43	Bio and Emerging Technology Institute	→ Supports research and innovation in modern pest diagnostic tools (molecular, genomic and AI-based detection). → Provides access to advanced laboratories and equipment. → Conducts joint research on invasive pests and emerging threats. → Provides training in biotechnology, bioinformatics and molecular diagnostics. → Conducts joint research on invasive pests and emerging threats. → Allows access to scientific publications and national biosecurity research. → Supports harmonization between biosafety and phytosanitary regulatory frameworks.	High	Medium

Situation analysis

AN OVERVIEW OF PROBLEM ANALYSIS AND ITS CONSEQUENCES

Phytosanitary legislation:



Due to limited awareness among policymakers, Ethiopia's phytosanitary system lacks important legal provisions. This regulatory gap exposes the country to increased risks of pest incursions and undermines confidence in the NPPO. As a result, Ethiopia faces export rejections and reduced access to international markets, resulting in lost trade opportunities.

Institutional and environmental factors:



The NPPO operates with limited financial resources and relies mainly on allocations from the central treasury, with minimal support from development partners. This situation has contributed to a challenging institutional environment characterized by weaknesses in policy implementation, management systems, organizational structure, coordination, and collaboration. As a result, the risk of non-compliance with phytosanitary requirements increases, the effective application of phytosanitary measures becomes more challenging to implement, and the effectiveness of phytosanitary delivery is reduced.

NPPO Mission and Strategy:



The NPPO currently operates without a dedicated mission or strategic plan and instead follows the broader direction of the EAA. This limits its ability to carry out core phytosanitary functions as specified by the IPPC, hindering efforts to build a strong national phytosanitary system that protects plant health, promotes trade and ensures environmental and human safety.

Organizational structure:



Inadequate planning and constraints related to civil service regulations have prevented the full implementation of the NPPO organizational structure within the EAA. This situation disrupts coordination with regional agencies and inspection points. As a result, structural weaknesses limit pest risk management and hinder international phytosanitary obligations.

NPPO's resources:



The NPPO requires an estimated 388 staff members to effectively carry out its mandate. However, only 154 positions have been formally approved, and currently only 39 expert positions are filled. Funding from the national treasury often overlooks the resource requirements for core phytosanitary activities, and no sustainable financing mechanism is currently in place.

Limited resources prevent the NPPO from acquiring necessary equipment, infrastructure and technological systems. As a result, the organization's capacity to safeguard the country's plant health, agricultural production, trade and environmental protection remains constrained.

Pest diagnostics:



Accurate pest diagnosis is essential for effective surveillance, import regulation, export certification and the establishment and maintenance of pest-free areas. However, the NPPO does not currently operate a dedicated diagnostic laboratory to support these critical services. Instead, it depends on diagnostic support from laboratories associated with the Ethiopian Institute of Agricultural Research. These facilities frequently encounter challenges in providing prompt results, which can delay evidence-based decision-making. Furthermore, pest diagnostic services currently lack sufficient qualified personnel to perform specialized tests. Consequently, phytosanitary activities, including surveillance, import authorization, export certification and maintaining pest-free areas, are constrained. These limitations diminish the overall efficiency and effectiveness of phytosanitary controls within the national plant health system.

National pest surveillance:



The implementation of general and specific surveillance activities, which are essential for the early detection of quarantine pests, determination of pest status and updating of regulated pest lists, remains limited. This is primarily due to the absence of a dedicated surveillance unit within the NPPO structure prior to the establishment of the EAA in 2021. The current unit has limited staffing, and some surveillance

functions are not being fulfilled. In addition, the NPPO lacks surveillance programmes specifically designed to provide pest distribution data necessary for phytosanitary decision-making. As a consequence, phytosanitary decisions are sometimes based on incomplete or insufficiently verified pest information. This situation may present challenges for pest risk analysis, the development of a validated national pest list, and maintaining an up-to-date pest information management system.

Pest eradication:



Ethiopia currently lacks a formalized pest eradication programme, which limits its capacity for emergency preparedness and response to emerging pest threats. Inadequate coordination between federal and regional authorities often results in delayed or insufficient responses, thereby increasing the risk of pest introduction and spread, and potentially affecting trade. These factors significantly increase the likelihood of widespread outbreaks involving both new and existing pests, resulting in substantial agricultural losses, trade disruptions, and long-term impacts on food security.

Phytosanitary import regulatory system:



The import inspection service has not received sufficient institutional recognition, largely due to limited communication by the NPPO regarding its mandate, roles and responsibilities to senior decision-makers. As a result, the EAA's organizational framework for import inspection remains incomplete. In addition, the import regulatory system faces significant resource constraints, which limit its ability to cover operational costs, procure pest diagnostic equipment and supplies from accredited vendors, and address

human resource requirements. These limitations also hinder the establishment of training programmes and specialized facilities necessary to strengthen technical capacity, as well as the development of facilities for pest eradication and safe disposal of regulated materials.

Furthermore, NPPO experts currently lack established networks for collaboration with their counterparts in neighboring countries and with regional economic communities. This limits opportunity for regional cooperation and information exchange. In addition, phytosanitary treatments are currently applied primarily to export consignments and are not systematically implemented for imported regulated articles. As a result, the limited effectiveness of inspections in detecting pests quickly increases Ethiopia's vulnerability to pest introductions.

Pest Risk Analysis:



In Ethiopia, Pest Risk Analysis (PRA) is not yet prioritized in the development of regulations governing the trade of plants and plant products. The current PRA process lacks a clearly defined structure to ensure effective coordination among national experts from relevant institutions, largely due to insufficient preparatory and institutional arrangements. In addition, limited financial resources and a shortage of personnel trained in PRA methodologies constrain both the operational capacity and regulatory effectiveness of the EAA. Operational manuals and procedures are also lacking, and there are no digital communication tools to share PRA results. As a consequence, the NPPO faces significant challenges in implementing international best practices for PRA, providing proper training, and forming partnerships to improve PRA services and build capacity. Consequently, phytosanitary decision-making often relies on case-by-case assessments rather

than a systematic approach to risk prioritization, which could increase the country's vulnerability to phytosanitary threats and risks.

Pest-free areas:



The concept of the pest-free area (PFA) is not yet widely applied as an effective phytosanitary measure for managing pests associated with export commodities. Although some progress has been made – for example, in efforts against *Xylella fastidiosa* in planting materials – the phytosanitary system still lacks full capacity in this area. Successful PFAs require robust surveillance and traceability, without which their establishment and maintenance are unfeasible. Ethiopia's limited experience with PFAs hinders its ability to meet export standards and access higher-value markets.

Export certification and transit:



Export certification services are constrained by shortages of skilled personnel, limited inspection capacity and the absence of effective traceability systems for agricultural exports. In particular, commodities sourced from smallholder producers often lose traceability as products are consolidated within market chains, making it difficult to identify the origin of consignments. This lack of traceability complicates the investigation of phytosanitary non-compliance cases and increases the risk of broad trade restrictions or blanket bans by importing countries.

Fraud, poor coordination between federal and regional authorities, and slow responses to importer requests further undermine export integrity. As a result, trading partner trust is decreasing, affecting Ethiopia's ability to retain and grow access to international agricultural markets.

FIGURE 2.

Problem analysis illustrating the key challenges and consequences affecting Ethiopia's phytosanitary system.



TABLE 2.

Top priority weaknesses by module identified through the PCE tool of Ethiopia's phytosanitary system.

Modules	Weaknesses				
	1	2	3	4	5
2	Lack of legal and institutional provisions for developing and adopting phytosanitary procedures.	Inadequate legal mechanisms to mobilize funds and respond to emergencies, including those related to BCAs, IAS, and LMOs suspected of being plant pests.	Absence of legal provisions for cooperation among relevant institutions, and delegation of third parties in phytosanitary service delivery.	No legal mandate or clarity on NPPO/exporter responsibilities in the post-certification period related to phytosanitary security and non-compliance notification.	Absence of structured provisions supporting phytosanitary research and evidence generation.
3	The NPPO salary scale does not enable staff retention or ensure the competitiveness of the phytosanitary service.	Insufficient educational and training programmes to build the NPPO service provision.	Inadequate infrastructure to support phytosanitary service delivery.	Limited supportiveness of national trade policies for NPPO service provision.	Inadequate networking mechanisms linking the NPPO with relevant institutions to support service delivery.

Modules	Weaknesses				
	1	2	3	4	5
4	Weak phytosanitary quality management system.	Absence of technical audit for the national phytosanitary service.	Lack of an established system for information sharing.	Weak financial autonomy of the NPPO.	Absence of performance-based incentive system.
5	Missing mandatory units in the NPPO's organizational structure.	Undefined vertical and horizontal linkages within the EAA and with regional regulatory authorities.	Inefficient operational processes within the NPPO.	Absence of adapted operational manuals for the NPPO.	Absence of internal and external technical audit procedures.
6	Limited government-allocated financial resources.	Critical shortage of infrastructure and facilities.	Inadequate human resources in terms of qualification, number and competence	Weak ICT systems to communicate and coordinate core activities within the NPPO.	Lack of database system for acquiring, storing and retrieving phytosanitary data.
7	Insufficient human and financial resources for pest diagnostic services.	Lack of a strategic and operational plan for pest diagnostics services.	Absence of documented procedures for quality control, handling and processing of samples and performance evaluation	Lack of a special legal arrangement for procurement.	Absence of a pest diagnostic laboratory information management and exchange system.
8	Insufficient number and capacity of core units responsible for pest surveillance.	Limited surveillance infrastructure, logistics, facilities and consumables.	Deficient operational procedures for surveillance service delivery.	Lack of an organized pest check-list database and an information-sharing platform.	Weak coordination among stakeholders in implementing specific surveillance activities.

Modules	Weaknesses				
	1	2	3	4	5
9	Lack of preparedness due to the absence of a contingency planning.	NPPO organizational structure lacks a dedicated entity for pest eradication.	Insufficient human, physical and financial capacity for pest eradication programmes.	Absence of legal instruments to guide and enforce pest eradication programmes.	Lack of developed or adapted pest eradication procedures and operational directives.
10	Insufficient physical, financial and human resources to deliver import regulatory services.	Lack of diagnostic services and equipment at points of entry.	Weak cooperation, information sharing and joint clearance procedures among relevant authorities.	Inadequate organizational structure to link relevant regulatory institutions.	Weak harmonization with regional economic communities.
11	Limited human, physical and financial resources for the PRA programme.	Absence of PRA operational manuals and procedures.	Weak communication mechanisms to mitigate risks identified through PRA.	Absence of periodic review and performance evaluation of the PRA programme.	Unjustified interference by government institutions in the importation of planting materials.
12	Absence of a designated unit within the organizational structure responsible for pest-free area.	Lack of training programmes to build EAA staff capacity to establish and maintain PFAs.	Insufficient financial resources and infrastructure to implement PFA programmes.	Absence of standard procedures, guidelines and operational manuals for identifying, establishing and maintaining pest free areas.	Lack of traceability legislation enabling tracking of contaminated consignments back to their origin.
13	Inadequate human resources capacity, in numbers, qualifications and skills.	Insufficient equipment and transportation resources for export certification activities.	Absence of documented NPPO procedures and work instructions for export certification systems.	Insufficient traceability for export consignments across all stages of production, handling and transport.	Lack of direct coordination between headquarters export managers and border inspection posts.

Situation analysis: overview of SWOT analysis

STRENGTHS

System-level strengths

The Ethiopian NPPO demonstrates strong alignment with global phytosanitary requirements and implements IPPC obligations. It maintains smooth working relationships with the customs authority and regional regulatory bureaus, enabling coordinated implementation of phytosanitary measures. The existence of national pest lists, although not yet formally published, provides an important technical foundation for pest management and risk analysis. The organization benefits from a dedicated and skilled workforce that is committed to its mission, though limited in number and professional composition. Its mandate promotes institutional networking with various relevant stakeholders, strengthening multisectoral collaboration. In addition, the clear definition of roles and responsibilities of trade partners under bilateral trade frameworks supports exporters in establishing effective internal quality control systems, particularly in high-value export crops.

Organizational strengths of the Ethiopian NPPO

The Ethiopian NPPO applies international phytosanitary standards, including those established under IPPC and ISPMs. This facilitates alignment with international best practices and

provides a clear framework for benchmarking phytosanitary performance. The NPPO operates under a formal regulatory mandate with recognized legal authority and institutional legitimacy to implement phytosanitary measures and enforce compliance. It performs well-defined core phytosanitary functions and benefits from a dedicated and technically knowledgeable workforce, although staff numbers remain limited. The organization has mechanisms in place to foster strong collaboration with national stakeholders and international organizations such as FAO and the IPPC Secretariat.

In addition, the NPPO has access to diagnostic laboratories in research institutions, as well as expertise available in academic institutions, which enhances its technical capacity and enables scientific collaboration. Ongoing digitalization initiatives and the growth of agricultural startups contribute to improved efficiency, data management, surveillance and information exchange. The organization also operates an established fee collection system and functions within a formal regulatory framework that provides official recognition of its mandate. Furthermore, staff capacity-building initiatives, including internal and external training programmes and leadership development, enhance adaptability and operational effectiveness within both the NPPO and the Ethiopian Agricultural Authority (EAA).

Core activity level strengths of the Ethiopian NPPO

The NPPO of Ethiopia operates within the national regulatory framework, ensuring a clear legal mandate and institutional legitimacy to perform core phytosanitary functions. It operates within an established organizational structure that allows for periodic revision and coordination with plant protection services in the Ministry of Agriculture (MoA), Bureaus of Agriculture (BoA) and regional regulatory authorities.

The Ethiopian Agricultural Authority (EAA) effectively conducts pest risk analysis (PRA), early detection, rapid response, permit processing, monitoring and evaluation as well as early warning services to safeguard plant health. The EAA is also formally mandated to develop and maintain operational procedures and guidelines for the effective functioning of the national phytosanitary system. A dedicated pest diagnostics structure has been established within the EAA to support evidence-based decision-making. The NPPO maintains communication channels for disseminating phytosanitary information to stakeholders and operates traceability systems within floriculture and selected fruit and vegetable export value chains.

In addition, the presence of a well-capacitated programme planning team within the EAA supports the strategic implementation of phytosanitary activities, while the Human Resource Directorate and training team support workforce development. Functional inspection and certification desks are also established at NPPO headquarters and border inspection posts to ensure compliance with phytosanitary requirements. Furthermore, the NPPO demonstrates strong commitment to

implementing IPPC provisions as a contracting party, reinforcing its alignment with international obligations.

WEAKNESSES

System-level weaknesses of the Ethiopian NPPO

The NPPO of Ethiopia faces several systemic weaknesses that limit its effectiveness in delivering comprehensive phytosanitary services. Legal and institutional provisions for the development and adaptation of phytosanitary procedures remain inadequate, and there are inadequate legal mechanisms to mobilize emergency funds or respond to urgent phytosanitary threats. In addition, inter-institutional cooperation mechanisms and the delegation of certain phytosanitary functions to third parties are not formally defined in the legal framework. The responsibilities of the NPPO and exporters during the post-certification period are also not legally defined, leaving gaps in maintaining phytosanitary security.

Furthermore, research and evidence generation to support phytosanitary decision-making are largely absent, reducing the organization's capacity for pest risk analysis and informed policy development. The NPPO's existing salary structure also constrains staff retention and limits the ability to maintain high-quality services. Physical and operational infrastructure is inadequate, and trade policies provide limited support for NPPO services. Additionally, weak networking systems hinder effective linkage and coordination with other institutions, restricting the NPPO's ability to deliver integrated and efficient phytosanitary services across the sector.

Organizational-level weaknesses of the Ethiopian NPPO

The NPPO of Ethiopia faces several organizational constraints that limit its efficiency, effectiveness and capacity to implement a robust national phytosanitary system. Staff programming, capacity-building and career development are poorly structured, and there is no performance-based incentive system to motivate personnel.

Quality management systems are also weak. Comprehensive quality assurance mechanisms and technical audit systems for the national phytosanitary service are not yet fully established. Resistance to organizational change may hinder the adoption of improved quality monitoring practices, audit systems, technologies, communication tools, incentive programmes and broader institutional reforms.

Information sharing systems remain underdeveloped, while vertical and horizontal coordination within the EAA and with regional regulatory authorities is not clearly defined. Operational processes are often inefficient, and adapted operational manuals for NPPO functions are absent. Internal and external technical audit procedures are also lacking.

Furthermore, financial autonomy remains weak, government-provided resources are limited, and critical infrastructure and facilities are insufficient. Human resources are inadequate in number, qualifications and competencies. Chronic challenges also exist in communication, coordination and database management, collectively reducing the NPPO's operational efficiency and effectiveness.

Core activity-level weaknesses of the Ethiopian NPPO

The Ethiopian NPPO faces significant weaknesses in its core operational activities, limiting its capacity to deliver effective phytosanitary services. Human, physical and financial resources are insufficient to conduct pest diagnostics, implement surveillance or execute annual pest eradication contingency plans. Operational plans for pest diagnostics are lacking, and nationally approved procedures for core NPPO activities are absent. There is no system for procuring specialized supplies, biological kits, primers, precision equipment or spare parts, and laboratory information exchange and management systems are not established.

Core units are limited in number and capacity, surveillance infrastructure and logistics are inadequate, and working procedures for service delivery are underdeveloped. Databases for pest checklists and information exchange platforms are missing, and coordination among stakeholders for surveillance and pest risk analysis (PRA) activities is weak. Pest diagnostic services and inspection equipment at points of entry are insufficient, and cooperation, information sharing, and joint clearance between the NPPO, customs, and consignment handlers are poor. Harmonization of phytosanitary activities with regional economic communities is inadequate.

Preparedness for PRA implementation and the establishment of pest-free area (PFAs) is limited by shortages in human, physical and financial resources, as well as the absence of operational manuals, standard procedures and effective communication systems. In addition, systems

for traceability, prevention of interference in import certification processes, and the establishment and maintenance of pest-free areas are lacking. Export certification systems are undermined by limited human resources, insufficient equipment and transport, poor operational procedures, weak traceability across production and handling stages, and absence of export managers at inspection, certification and border posts.

OPPORTUNITIES

System-level opportunities for the Ethiopian NPPO

The NPPO of Ethiopia has multiple system-level opportunities to strengthen its phytosanitary services and international trade capacity. International phytosanitary standards provide a clear framework for aligning national practices with global requirements. Access to technical support from international partners such as FAO and the IPPC Secretariat can enhance capacity for risk analysis, diagnostics and regulatory compliance. National disaster risk management platforms offer a mechanism to integrate pest-related emergency responses effectively.

Collaboration with research institutes, universities and the private sector actors involved in plant protection programmes provides opportunities for knowledge generation and evidence-based decision-making. Clear definitions of roles and responsibilities under bilateral trade frameworks support exporters in implementing internal quality control systems and meeting international requirements. Emerging digital platforms and information systems can be leveraged to improve post-certification monitoring, traceability and information exchange. In

addition, regional collaboration on pest diagnostics and Pest Risk Analysis (PRA) can strengthen shared capacity and harmonization of practices.

Opportunities also exist to mobilize government and development partner funding, particularly through programmes related to climate-smart agriculture, biodiversity conservation and agricultural resilience. Staff motivation and professional development can be enhanced through internal training programmes and access to regional and international knowledge platforms. Finally, advocacy and strategic planning may support increased budget allocations, enabling the NPPO to allocate resources more effectively towards priority activities.

Organizational-level opportunities for the Ethiopian NPPO

The Ethiopian NPPO has several organizational-level opportunities to strengthen its institutional capacity, efficiency and credibility. International quality assurance and audit frameworks, including ISO standards, HACCP system and guidelines under FAO and the IPPC, provide references for improving processes, enhance transparency and reinforce institutional credibility. The adoption of digital and cloud-based systems, technology-driven process improvements and customized operational manuals can further support the automation of quality monitoring, performance tracking, data sharing and training. These tools can also improve onboarding processes, decision-making and operational efficiency.

International best practices provide opportunities to build trust, optimize resource utilization and improve coordination among multiple stakeholders and regional offices. The introduction

of performance-based incentive systems within human resource policies could further enhance staff motivation, retention and alignment with organizational goals. Collaboration with external auditors, private sector actors and regional partners could strengthen audit credibility, accountability and continuous system-wide improvement.

The IPPC frameworks and related guidelines also provide references for defining the NPPO institutional structures, mandates and operational responsibilities, offering opportunities to align national operations with international standards and harmonize activities across federal and regional levels. Financial resources may be mobilized through development partners, bilateral and multilateral donors, self-generated revenue, and flagship programme resources. Furthermore, technical and research support can be leveraged through collaboration with universities, FAO, COLEAD, CABI, national statistical agencies and other knowledge hubs. The continued expansion of internet connectivity and digital infrastructure will also facilitate evidence-based decision-making and operational efficiency.

Core activity-level opportunities for the Ethiopian NPPO

The NPPO of Ethiopia has numerous opportunities to strengthen its core operational activities, enhance service delivery, and support safe trade. Skilled pest diagnostic professionals are available across plant health clinics, agricultural universities and national research institutes, complemented by national experts in management and strategic planning, as well as emerging artificial intelligence (AI) tools for operational

and strategic support. Access to global and regional organizations, including FAO, IPPC, WTO, CABI, COMESA, IGAD, and EAC, provides valuable opportunities for technical cooperation. In addition, ISPM, adapted procedures from other countries, international pest databases and technical guidance provide strong support for pest identification, eradication strategies and Pest Risk Analysis (PRA) development.

Plant protection laboratories within research institutes and higher learning institutions, as well as exemplary national and international labs, provide opportunities for benchmarking, technical collaboration and capacity development. Expanding internet connectivity and digital technologies, including agricultural information hubs under MoA, remote pest monitoring systems, AI-based diagnostics, and mobile/web platforms can improve data sharing, operational efficiency, post-certification tracking, monitoring and evaluation, and real-time dissemination of PRA findings. ISPMs also provide internationally recognized guidance for the development of pest surveillance systems and pest eradication procedures adapted to national contexts.

Supportive national legislation allows for the revision of NPPO organizational structures to improve institutional efficiency. Universities and training institutions provide facilities and human resources for internal training, capacity-building initiatives and leadership development. Access to international funding, bilateral and multilateral grants, multi-donor flagship programmes (e.g. FSRP), and climate-smart agriculture or biodiversity initiatives support institutional strengthening and staff motivation.

Furthermore, the growth of agricultural exports and imports, increasing awareness of the importance of plant health, competitive export markets and the rising demand for private phytosanitary services create opportunities to strengthen the NPPO and expanding its impact. In addition, government commitment to addressing core unit inefficiencies and the presence of national M&E frameworks also provide opportunities for evidence-based planning, continuous improvement and enhanced operational effectiveness.

THREATS

System-level threats to the Ethiopian NPPO

The Ethiopian NPPO faces several system-level threats that could undermine its effectiveness and international trade credibility. Repeated violations or unresolved pest interceptions pose risks of penalties from trade partners, loss of export market credibility and potential import restrictions. The escalating introduction of invasive alien species (IAS) and living modified organisms (LMOs) threatens agricultural production and economic stability. Overlapping mandates with other institutions can lead to conflicts, confusion and reduced regulatory effectiveness. Limited availability of national data and insufficient technical evidence increase reliance on outdated information or external evidence, raising the risk of erroneous regulatory decisions. Additionally, unresolved pest interceptions or trade non-compliance could result in reputational damage at the international level, potentially affecting Ethiopia's ability to maintain and expand access to global agricultural markets.

Organizational-level threats to the Ethiopian NPPO

The NPPO of Ethiopia faces several organizational-level threats that could compromise its operational effectiveness and credibility. Non-compliance with phytosanitary requirements can lead to trade restrictions, loss of market access and diminished institutional credibility. Weak financial management systems increase the risk of high costs, fund misuse, corruption or inefficient resource allocation. Inconsistent enforcement or variable service quality can reduce trust from exporters, importers and farmers.

The absence of robust checks and balances within regulatory processes allows individual regulatory organs to take independent actions, weakening national consistency and regulatory effectiveness. External factors such as changes in government priorities, shifts in donor policies, economic or security crises, inflation and global disruptions may constrain budget allocation, fund mobilization and operational planning. Additionally, limited integration of phytosanitary topics in agricultural curricula and restricted access to local or national knowledge resources can hinder technical expertise and overall operational effectiveness.

Core activity-level threats to the Ethiopian NPPO

The Ethiopian NPPO faces several threats at the core operational level that may undermine its ability to deliver effective phytosanitary services. Low prioritization of pest-related issues by decision-makers may limit the allocation of financial and institutional resources.

Institutional constraints within the civil service system, including rigid evaluation models and frequent changes in rules, restrict organizational flexibility and create institutional uncertainty.

Financial challenges also pose significant challenges. Declining support from development partners, budget constraints, inflation-driven price fluctuations and conditionalities attached to external funding hinder investment in essential infrastructure such as digital traceability systems and advanced inspection equipment. Preference for lowest-cost suppliers can

compromise the quality of operational inputs, reducing efficiency and effectiveness.

Emerging risks related to cybersecurity vulnerabilities, globalization of agricultural trade and climate change-driven pest threats may increase operational challenges. Exporters or importers may attempt to bypass traceability systems, resulting in trade rejections or bans. Political instability further threatens the continuity of pest surveillance, diagnostics and trade operations, creating additional uncertainty for the NPPO’s core functions.

FIGURE 3.
Strategic transformation of Ethiopia’s weak phytosanitary system based on the results of the SWOT analyses.

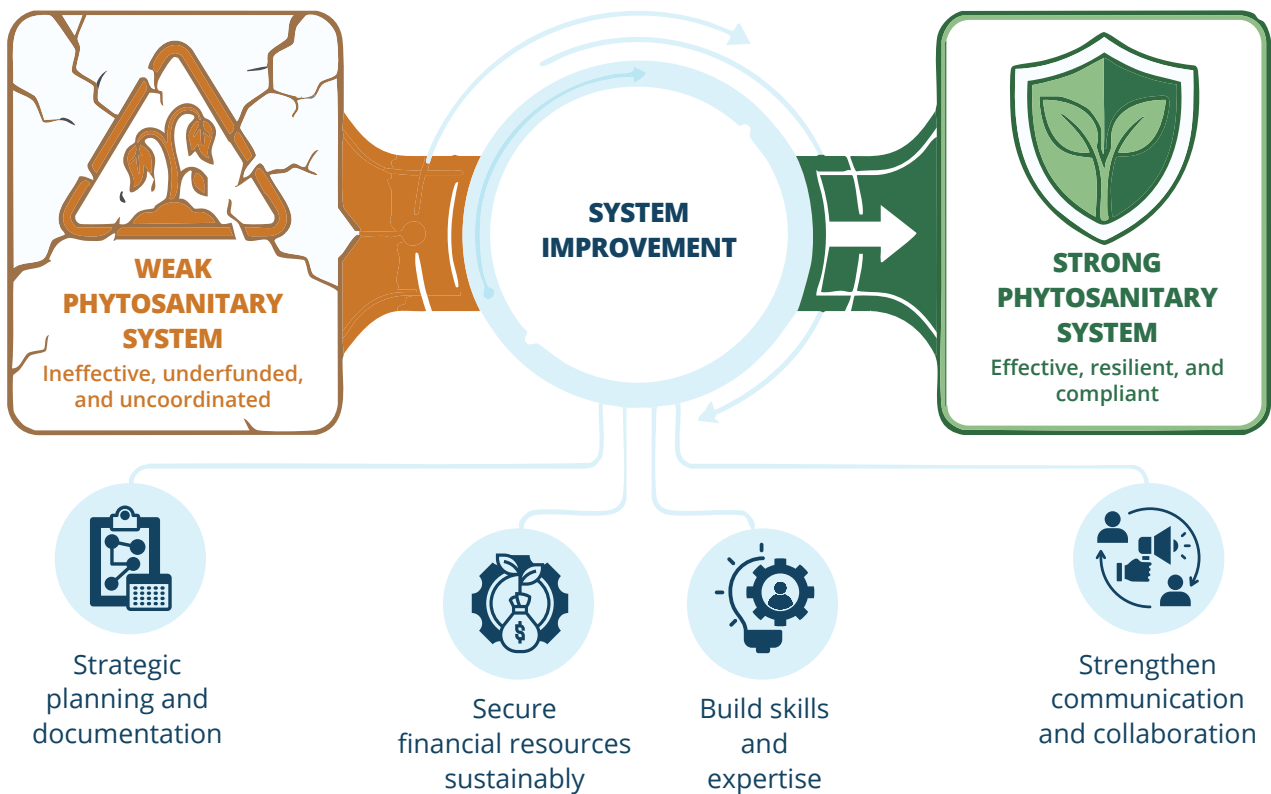


TABLE 3.

SWOT analysis on Ethiopia's phytosanitary system.

SYSTEM LEVELS			
STRENGTH 	WEAKNESS 	OPPORTUNITY 	THREAT 
→ Application of global phytosanitary standards, including IPPC obligations. → Effective working relationships with customs authorities and regional regulatory bureaus. → Existence of national pest lists, although not yet published, providing a foundation for pest management and risk analysis. → Dedicated and technically skilled NPPO workforce committed to its mission. → The NPPO mandate promotes institutional networking with various institutions. → Clearly defined roles and responsibilities of trade partners under bilateral trade frameworks, supporting exporters with internal quality control systems.	→ Absence of legal and institutional provisions for developing or adapting phytosanitary procedures. → Inadequate legal mechanisms to mobilize funds and respond to phytosanitary emergencies. → Lack of legal provisions for inter-institutional cooperation and delegation of functions to third parties. → Lack of legal clarity regarding NPPO and exporters' responsibilities during post-certification period. → Limited phytosanitary research and evidence generation to support regulatory decisions. → NPPO salary structure limits staff retention and the maintenance of quality services. → Inadequate physical infrastructure and operational systems. → Limited policy support for NPPO services within trade systems. → Weak networking mechanisms linking the NPPO with supporting institutions.	→ Availability of international phytosanitary standards (IPPC/ISPM) to guide system development. → Access to technical support from international partners such as FAO and the IPPC Secretariat. → Presence of national disaster risk management platforms that can integrate pest-related emergency responses. → Collaboration opportunities with research institutes, universities and private sector organizations engaged in plant protection programmes. → Bilateral trade frameworks that clarify roles and responsibilities of trade partners, supporting exporters with internal quality control systems. → Availability of global digital platforms for post-certification tracking, monitoring and information exchange. → Opportunities for regional collaboration on pest diagnostics and Pest Risk Analysis (PRA). → Access to government and donor funding for climate-smart agriculture, biodiversity grants and related initiatives → Opportunities for staff capacity development through internal training programmes and through access to regional and international knowledge platforms. → Potential for improved budget allocations through advocacy and strategic planning.	→ Risk of penalties, loss of market credibility and import restrictions due to repeated violations or unresolved pest interceptions. → Increasing introduction of IAS/LMO with potential economic and agricultural impacts. → Overlapping institutional mandates leading to regulatory conflicts and reduced effectiveness. → Reputational damage at the international level due to unresolved pest interceptions. → Dependence on outdated or external data sources due to limited local technical capacity.

ORGANIZATIONAL LEVEL

STRENGTH 	WEAKNESS 	OPPORTUNITY 	THREAT 
→ Application of international phytosanitary standards (IPPC/ISPM). → NPPO embedded within the national regulatory authority with legal mandate and enforcement powers. → Established core functions supported by experienced staff. → Strong collaborations with national stakeholders and international organizations (FAO, IPPC). → Access to laboratories, diagnostic centers, research facilities and academic expertise. → Ongoing digitalization initiatives and agricultural technological development. → Established fee collection system. → Formal regulatory framework recognizing the phytosanitary sector. → Staff capacity development through internal and external training and leadership programmes.	→ Weak staff programming, career development and training. → Weak quality assurance systems. → Absence of technical audit mechanisms for phytosanitary services. → Potential staff resistance to institutional reform and the adoption of new technologies. → Lack of structured information sharing. → Weak financial autonomy. → Absence of a performance-based incentive system. → Missing mandatory units in EAA's organizational structure. → Undefined coordination mechanisms within EAA and with regional regulatory authorities. → Inefficient operational processes within the NPPO. → Absence of adapted operational manuals for NPPO functions. → Lack of internal and external technical audit procedures. → Limited government financial allocations. → Critical shortage of infrastructure and facilities. → Insufficient human resources capacity. → Persistent communication, coordination and database management challenges.	→ Opportunity to implement global quality assurance and audit frameworks (ISO, HACCP, FAO, IPPC) to guide processes, enhance transparency and strengthen credibility. → Availability of digital and cloud-based tools, technology-driven process improvements and customized manuals to automate quality monitoring, track performance, enhance data sharing, support training/onboarding, and improve operational efficiency and decision-making. → Availability of international best practices to build trust, improve coordination and optimize resources among multiple stakeholders and regional offices. → Potential to integrate performance-based incentives into HR policies to improve staff motivation, retention and alignment with organizational goals. → Possible policy changes by donors or private-sector partners that may affect resource mobilization and funding opportunities. → Opportunities to collaborate with external auditors, private sector and regional partners to strengthen audit credibility, accountability and system-wide continuous improvement. → Availability of IPPC guidelines, regulations and frameworks defining NPPO/EAA structures, powers, and duties, enabling alignment with international standards and harmonization across federal and regional levels. → Opportunities to access funding from development partners, bilateral/multilateral donors, self-generated revenue, and flagship programme resources. → Access to technical and research support from agricultural universities, FAO, COLEAD, CABI, national statistical agencies and other knowledge institutions, supported by the expanding internet connectivity and IT infrastructure to support decision-making and operational efficiency.	→ Non-compliance with phytosanitary restrictions may lead to trade restrictions, market access loss and diminished credibility. → Weak financial management systems increase the risk of high costs, misuse of funds, corrupt practices or inefficient resource allocation. → Reduced trust from exporters, importers, farmers in the regulatory body due to inconsistent enforcement or service quality. → The lack of checks and balances in the operational modality of regulatory organs may allow institutions to take independent actions that weaken national regulatory consistency and effectiveness. → Changing government priorities, policy shifts in funding institutions, economic or security crises, inflation, and global crises may limit budget allocation, fund mobilization and operational planning. → Limited integration of phytosanitary topics within agricultural curricula may constrain the development of specialized technical expertise. → Limited access to national knowledge resources and research outputs may affect technical expertise and operational effectiveness.

CORE ACTIVITY LEVEL

STRENGTH 	WEAKNESS 	OPPORTUNITY 	THREAT 
→ NPPO operates within a legally mandated regulatory authority. → Established organizational structure integrated with plant protection services at federal and national level (MoA, BoA). → EAA conducts PRA, early detection, rapid response, permit processing, monitoring, evaluation and early warning services. → EAA is mandated to develop and implement all required working procedures for operating the phytosanitary system. → Established Presence of pest diagnostics structure within the EAA. → Presence of communication channels to reach stakeholders for phytosanitary information dissemination. → Presence of traceability system operating in floriculture, fruits and vegetable exports. → Presence of a well-capacitated programme planning team within EAA. → Presence of Human Resource Directorate and training team within EAA. → Presence of functional inspection and certification desks at NPPO headquarters and border posts. → Committed to implementing IPPC obligations.	→ Insufficient human, physical and financial resources to conduct pest diagnostics. → Absence of operational plan for efficient pest diagnostics service. → Lack of nationally approved procedures for the core activities of the NPPO. → Lack of system to procure specialized supplies, biological kits, primers and precision equipment spare parts. → No laboratory information exchange and management system for pest diagnostics. → Insufficient number and capacity of core units to do pest surveillance in coordination. → Limited surveillance infrastructure, logistics, facilities, consumables and working procedures for delivering the required services. → Absence of well-organized database for pest checklists and information exchange platform. → Weak coordination among stakeholders for surveillance activities. → Insufficient human, physical and financial resources to implement annual pest eradication contingency plans. → Absence of pest diagnostic services and lack of inspection equipment at points of entry. → Weak cooperation between NPPO, customs and consignment handlers. → Limited harmonization with regional economic communities. → Limited preparedness for PRA implementation. → Weak regulatory safeguard in import certification. → Absence of structures responsible for the establishment and maintenance of pest-free areas. → Weak traceability legislation. → Insufficient capacity for export certification. → Limited equipment and transport for export certification. → Poor traceability of export consignments throughout production, handling, transport and certification stages. → Absence of coordination between export managers and border post operators.	→ Availability of pest diagnostic professionals across plant health clinics, agricultural universities and national research institutes. → Access to global and regional organizations (FAO, IPPC, WTO, CABI, COMESA, IGAD, EAC). → Availability of ISPM standards and international pest databases. → Presence of plant protection laboratories in research institutes, higher learning institutions, and exemplary national/international labs for benchmarking and capacity building. → Expansion of digital technologies for remote pest monitoring, AI-based diagnostics and data sharing. → Agricultural information platforms within the Ministry of Agriculture. → ISPMs provide global standards to guide contextualized pest surveillance and eradication procedures. → Expanded internet access (including 5G) enhances digital surveillance, data exchange and operational efficiency. → Presence of supportive national laws that allow the civil service agency to do structural reforms within the NPPO. → Availability of universities and training institutions for capacity-building initiatives and leadership development opportunities. → Access to international funding, bilateral/multilateral grants, multi-donor flagship programmes (e.g. FSRP), climate-smart agriculture or biodiversity funding, and government/donor support for institutional strengthening and staff motivation strategies. → Rising agricultural exports and imports, increasing awareness of plant health importance for trade and food security, competitive high-quality export markets, and growing demand for private phytosanitary services. → Government readiness to solve NPPO core units' inefficiencies. → Presence of national MEL frameworks to enable evidence-based planning and continuous improvement.	→ Low prioritization of pest-related issues by decision-makers at all levels. → Limited flexibility in civil service evaluation models, restricting organizational unit approvals. → Cybersecurity vulnerabilities affecting digital trade systems. → High initial investment requirements for digital traceability systems and advanced inspection equipment. → Declining financial support from development partners, budget constraints and price fluctuations due to inflation and economic crises. → Procurement rules prioritizing lowest bidders over quality thus affecting operational efficiency. → Conditionalities attached to donor funding. → Frequent changes in civil service rules, and government policies causing institutional uncertainty. → Rapid changes in global trade market. → Climate-change driven pest dynamics. → Fraudulent practices bypassing traceability requirements and causing trade rejections or export bans. → Political instability disrupting pest surveillance, diagnostics and trade operations.

Situation analysis: grouping the priority weaknesses of Ethiopia's phytosanitary system

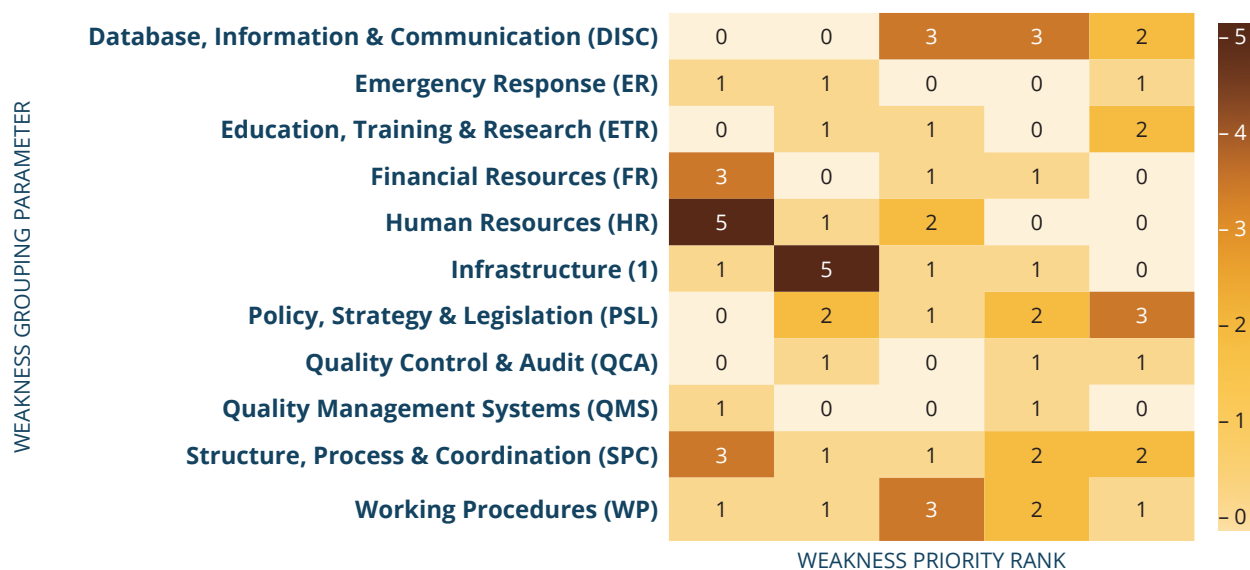
Five priority weaknesses were identified for each of the 12 modules of the PCE by ranking the range of weaknesses generated during the assessment. This process was followed by a problem analysis to validate the selected priority weaknesses through an examination of their underlying causes and potential impacts.

The five priority weaknesses from each module were systematically categorized using seven grouping parameters. The grouping parameters help determine the focus areas the phytosanitary strategy should follow to bring Ethiopia's phytosanitary system out of its current situation. The weakness grouping parameters are: 1. Human Resources (HR); 2. Financial Resources (FR); 3. Policy, strategy and legislation (PSL); 4. Structural organization, process and coordination (SPC); 5. Infrastructure (I); 6. Database, information and communication system (DISC); 7. Working procedures (WP); 8. Quality Control and Audit (QCA); 9. Education, training, and research (ETR); 10. Quality management system (QMS); 11. Emergency response (ER).

The results of the analysis by PCE modules are presented in the heatmap graph above (Figure 4). The ranking of the grouping parameters was based on the level of each weakness within each module and the frequency of weaknesses under a particular grouping parameter. Consequently, most of the priority weaknesses were grouped under the 'human resources' parameter, followed by 'infrastructure', 'structure-process-coordination', and 'financial resources'. The least identified weaknesses were associated with the 'quality assessment and auditing' parameter.

FIGURE 4.

Frequency of priority rankings for phytosanitary weaknesses, ranging from 0 (lowest priority) to 5 (highest priority), across the key weakness grouping parameters.



Mung crop bean in Kucha southern Ethiopia with promising export potential

Situation analysis: identification of key strategic objectives

The assessment of phytosanitary service implementation uncovered several challenges, including limited communication and insufficient stakeholder awareness of plant protection policies and legislation. The Ministry of Agriculture (MoA) has developed a Ten-Year Agriculture and Rural Development Policy and Strategy, which includes the Plant Management Support System (PMSS). However, regional disparities exist in access to and consideration of plant protection policies. Current legislation is incomplete and has gaps that need addressing. To resolve these issues, the MoA is updating plant protection and quarantine proclamations and developing regulations, guidelines and directives for better enforcement.

An additional concern highlighted in the PMSS strategy is the operational capacity of pest diagnostics laboratories, many of which remain at the planning or early development stages. While the ability of Plant Health Clinics (PHCs) to conduct pest surveillance and surveys has improved, financial resources remain insufficient for optimal functioning. Progress in the pest biosystematics service has been relatively slow, although it has received attention from the MoA and regional Bureaus of Agriculture. The lack of a nationwide coordinated pest surveillance system has allowed invasive pests to enter the country, with few management strategies in place for some species. Both the MoA and regional authorities have yet to fully implement the mandates outlined in the PMSS strategy, largely due to the absence of detailed implementation guidelines.

Based on the findings of Ethiopia's phytosanitary capacity assessment, there is a need to define strategic objectives and priorities to guide the NPPO's phytosanitary system during the 2026-2030 period. The following strategic objectives were identified:

1. Human Resource Capacity Development (HRCD)
2. Infrastructural and Digital Capacity Development (IDCD)
3. Fit-for-Purpose Organizational Structure (FPOS)
4. Strengthening Core Phytosanitary Operational Capacity (SCPOC)
5. Sustainable Financing of Phytosanitary Operations (SFPO)
6. Strengthening Legal and Regulatory Instruments (SLRI)
7. Harmonization of Phytosanitary Procedures among Regional States (HPPRS)

Strategic objectives defined

Human resources capacity development:



Following the establishment of the phytosanitary regulatory system within the Ethiopian Agricultural Authority (EAA), the civil service approved the corresponding organizational structure. Since 2022, the Authority has recruited additional experts to fill these roles, primarily selecting individuals with backgrounds in plant protection and related areas from agricultural development services, academia and research institutions.

However, the current human resource development approach and its implementation in academic curricula have given limited attention to specific aspects of plant protection, such as prevention, eradication, containment and management. Consequently, phytosanitary topics have not been widely incorporated into teaching curricula or training programmes. Existing personnel have often been recruited based on their professional alignment rather than direct specialization.

In addition, the EAA has not yet approved a comprehensive human resource development plan for training new recruits in the various fields relevant to phytosanitary activities, including the seven core areas. There is, therefore, a need to further develop the technical capabilities of employees working in these core fields.

To build the necessary human capacity and improve service delivery, the phytosanitary

strategy should prioritize the following actions:

- Establish recruitment criteria to attract qualified experts in plant protection, plant science and applied biology.
- Organize consultation workshops to incorporate phytosanitary topics into curricula at key agricultural universities.
- Develop a responsive human resource development plan that includes training for recruits in both the short and long term.
- Enhance practical skills and professional exposure through experience-sharing visits and technical exchanges with countries such as Australia, Japan, Kenya and Brazil.

Infrastructural and digital capacity development:



The absence of dedicated national plant protection laboratories significantly limits the operational capacity of the NPPO. As a result, the NPPO often relies on costly external service providers for detecting and identifying emerging pests of concern. Furthermore, inspections at import and export points primarily rely on visual assessments, which are inadequate for fully detecting quarantine pests and other threats. To ensure effective risk management and comply with international standards, the establishment of fully equipped national plant protection laboratories is required. The NPPO should therefore adopt a proactive strategy to develop, operate and sustainably manage laboratory infrastructure.

Fit for purpose organizational structure:



A well-designed and responsive organizational structure is essential for the NPPO to fulfill its legally mandated duties and responsibilities. In line with IPPC recommendations, the NPPO must address structural inefficiencies that have hindered service delivery. Under the current arrangement, phytosanitary inspection posts operate under a different branch of the EAA, which has disrupted operational coordination and weakened the functional relationship between the NPPO and these posts. In addition, workforce reductions resulting from the consolidation of previously independent operational units have further reduced institutional effectiveness. To address these challenges, the NPPO will establish a fit-for-purpose organizational structure that encompasses all core units and ensures their efficient operation. This process will be undertaken through a series of collaborative initiatives with the Human Resource Development Unit of the EAA to ensure that staffing structures, mandates and operational linkages are appropriately aligned.

Strengthening core phytosanitary operational capacity:



As described earlier, the NPPO has not yet fully integrated all essential core units to operate in a coordinated manner, effectively contribute to protecting the country from phytosanitary threats and enhance Ethiopia's export capacity. Strengthening coordination among these units is therefore essential.

Each core unit requires trained personnel, improved surveillance and diagnostic capabilities, and access to modern tools to enhance operational efficiency. In addition, they require

sources of information and knowledge, such as national and regulated pest checklists, and communication technologies that speed up the exchange of pest information and communication with domestic and international partners in agricultural trade (e.g. IPPC, WTO, importing countries, customs, transporters). Furthermore, the comprehensive integration of all phytosanitary core activities through the development and implementation of a Pest Information Management System (PIMS) and an integrated pest database has become a strategic priority, essential for informed decision-making, efficient service delivery and compliance with international phytosanitary standards.

Sustainable financing of phytosanitary operations:



The EAA has secured initial funding to establish itself as a responsive regulatory authority, including the development of phytosanitary capacities. In addition to annual government budget allocations, it has also received supplementary support from development partners. As a relatively new organization, the EAA will require additional investment and financial resources to effectively carry out its operational responsibilities and fulfill its core mandate.

At present, the absence of functional phytosanitary laboratories at the EAA headquarters, combined with the geographic dispersion of plant quarantine posts, has increased operational costs. Although these challenges are recognized by management, interim measures – such as the consolidation of certain operational units – have been implemented to streamline operations. However, these measures have unfortunately affected the efficiency of service delivery.

To address these challenges, the NPPO should reassess its organizational structure, restore all essential units and formulate a comprehensive financing strategy to safeguard national phytosanitary security. Achieving sustainable funding will entail developing strategies to secure adequate resources, primarily from the national treasury, bilateral and multilateral partners, as well as through revenue generation from the services provided. This approach will require the EAA to proactively engage with key government bodies, development partners, the civil service and relevant legal entities.

Strengthening legal and regulatory instruments:



The country's phytosanitary service has been operating under Plant Quarantine Regulation No. 4/1992; which is now considered outdated. In response, the Government of Ethiopia has undertaken revisions to strengthen the legal framework and align it with national priorities, including the country's aspiration to join the WTO. As a result, a new Plant Protection and Quarantine Proclamation, has been approved by Parliament (1400/2025).

In addition to the proclamation, other legal instruments, such as regulations, directives and guidelines, also need to be developed and formally approved. The preparation and adoption of the documents require a coordinated effort from various key stakeholders. In addition, the approved proclamation and other

legal documents must be communicated and disseminated to users at all levels. This communication should occur at the national, regional, woreda and kebele levels. Particular attention should be given to export-oriented areas to ensure that traceability extends to growers and producers and that phytosanitary issues are easily addressed.

Harmonization of phytosanitary procedures among regional states:



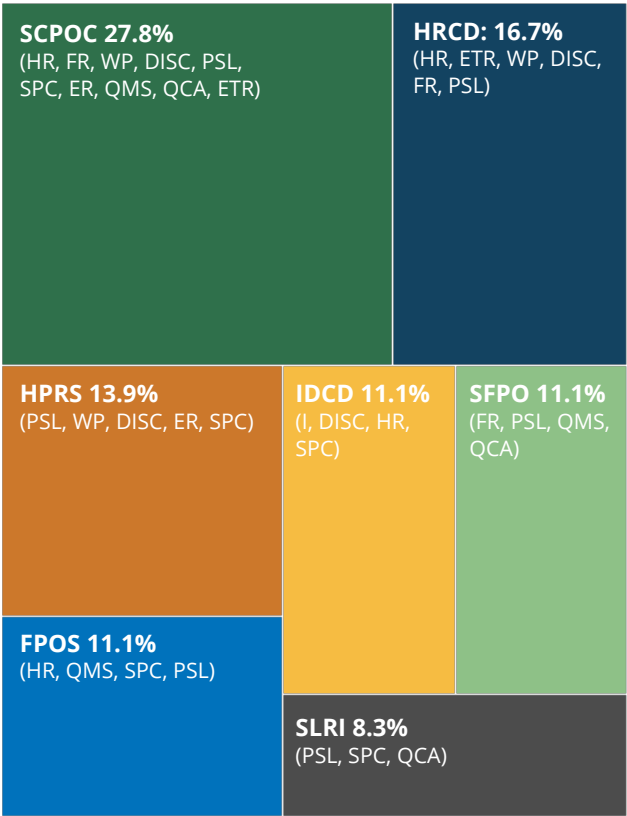
The country operates a federal and regional agricultural regulation, with both federal and regional authorities responsible for phytosanitary matters. However, the level of coordination and the strength of collaboration are limited. In addition, the procedures currently followed to implement the seven core phytosanitary activities are based on international standards (ISPM series), which have not yet been fully adapted to the country's context and operational conditions. Therefore, the operational methods of the federal and regional regulatory agencies need to be reviewed and harmonized. This harmonized framework should promote the consistent use of nationally adapted phytosanitary procedures. Consequently, the development, customization and adoption of standardized working procedures for the different core units is a priority for the NPPO to ensure effective and coordinated implementation of phytosanitary services throughout the country.

Detailed descriptors for the strategic objectives

The seven strategic objectives identified through the phytosanitary capacity assessment are described below, with their relative contributions illustrated in Figure 5 based on the proportion of prioritized weaknesses addressed by each objective.

- 1. Human resource capacity development (16.7%):** This objective aims to mitigate skilled personnel shortages through strategic recruitment, retention, targeted training and continuous professional and career development initiatives. These measures address identified human resource challenges and sought to align education, training and research programmes with international standards. Sustaining a competent workforce ensures consistent and effective operational procedures. Furthermore, strengthening staff capabilities enhances planning and financial management and supports active participation in policy development and implementation.
- 2. Infrastructural and digital capacity development (11.1%):** This objective addresses significant infrastructure gaps by establishing and equipping labs, diagnostic centres and inspection facilities. It also improves data and communication systems through digital pest platforms and electronic certification. These upgrades boost staff efficiency and streamline organizational workflow.

FIGURE 5
Proportion of phytosanitary weakness grouping parameters addressed under each of the seven strategic objectives.



- 3. Fit-for-purpose organizational structure (11.1%):** This objective addresses weaknesses in organizational setup by realigning the phytosanitary system with its strategic functions. It clarifies mandates, roles and responsibilities to improve structure and coordination. The objective aligns with policy and legislative requirements, strengthens human resources through clear job descriptions and accountability, and integrates quality management systems to support ongoing performance improvement.

4. Strengthening core phytosanitary operational capacity (27.8%):

This objective represents a central pillar of system strengthening and addresses approximately 27.8 percent of identified weaknesses. It supports the enhancement of technical competencies among human resources in critical areas, including inspection, surveillance, diagnostics and certification. The provision of adequate financial resources underpins operational sustainability, while the establishment of clear and standardized procedures will promote consistency across activities. The integration of modern databases and information systems will support evidence-based decision-making. Additionally, bridging legal and policy gaps will improve regulatory enforcement, while improved institutional linkages will enhance coordination. Emergency response capacity will also be reinforced through quality management and auditing frameworks. Investment in education, training and research will drive ongoing innovation and adaptability within the system.

5. Sustainable financing of phytosanitary operations (11.1%):

In response to financial constraints identified as a key challenge, this objective seeks to develop diversified and reliable funding sources (11.1 percent). Integrating financial mechanisms into national policies and legal frameworks will foster sustainable long-term outcomes. Rigorous quality management systems and comprehensive audit procedures will promote financial accountability and transparency, ensuring efficient and responsible use of resources.

6. Strengthening legal and regulatory instruments (8.3%):

This objective addresses deficiencies in policy, strategy and legislative frameworks through the modernization and revision of phytosanitary laws to align with international standards (8.3 percent). It enhances institutional clarity by delineating mandates and responsibilities, thereby addressing structural and coordination shortcomings. In addition, it establishes a robust legal basis for quality control and auditing by mandating compliance, inspections and certification procedures, ensuring the credibility and enforceability of all phytosanitary activities.

7. Harmonization of phytosanitary procedures among regional states (13.9%):

This objective addresses regional fragmentation by promoting the harmonization of phytosanitary regulations and procedures across the country, thereby improving policy coherence. Unified processes enable consistent inspections, certifications and surveillance, while shared databases facilitate pest information exchange and coordinated emergency responses. Enhanced institutional collaboration reduces duplication and inefficiency.

This strategy is planned for the next five years, yet there is a critical need to set activities that can be met by the different strategic objectives as it will not be possible to have everything done during the lifetime of the strategy. Thus, putting milestones was found to be essential, thus critical activities that must be met to have a functional and responsive phytosanitary system in place are identified. The following table describes the key activities against each strategic objective to be met during the lifetime of this strategy (Table 4).

TABLE 4.**Milestone of the seven strategic objectives with time-bound envisaged actions.**

STRATEGIC OBJECTIVE	TIME-BOUND ENVISAGED ACTION
Human Resource Capacity Development (HRCDD)	Develop and maintain a competent workforce for phytosanitary services by providing targeted training, certification, and continuous professional and career development for technical, managerial and research staff by 2030.
Infrastructural and Digital Capacity Development (IDCD)	Upgrade and expand physical and digital infrastructure, including laboratories, inspection points, storage facilities and information systems, to support efficient phytosanitary operations by 2030.
Fit-for-Purpose Organizational Structure (FPOS)	Establish a streamlined and efficient organizational structure with clear roles, responsibilities and coordination mechanisms across national and regional levels by 2027.
Strengthening Core Phytosanitary Operational Capacity (SCPOC)	Enhance the efficiency, quality and compliance of core phytosanitary activities, including inspection, certification, pest risk analysis and emergency response, through improved procedures, quality control and monitoring systems by 2030.
Sustainable Financing of Phytosanitary Operations (SFPO)	Establish secure, reliable and sustainable funding mechanisms, including national budget allocation, cost recovery and partnerships, to ensure the continuous operation of phytosanitary services by 2030.
Strengthening Legal and Regulatory Instruments (SLRI)	Develop, update and enforce legal and regulatory frameworks aligned with international standards to support the delivery of effective phytosanitary services by 2030.
Harmonization of Phytosanitary Procedures among Regional States (HPPRS)	Establish and implement harmonized phytosanitary procedures, standard operating protocols and data-sharing mechanisms across regional state governments by 2027, ensuring national consistency and facilitating safe trade.

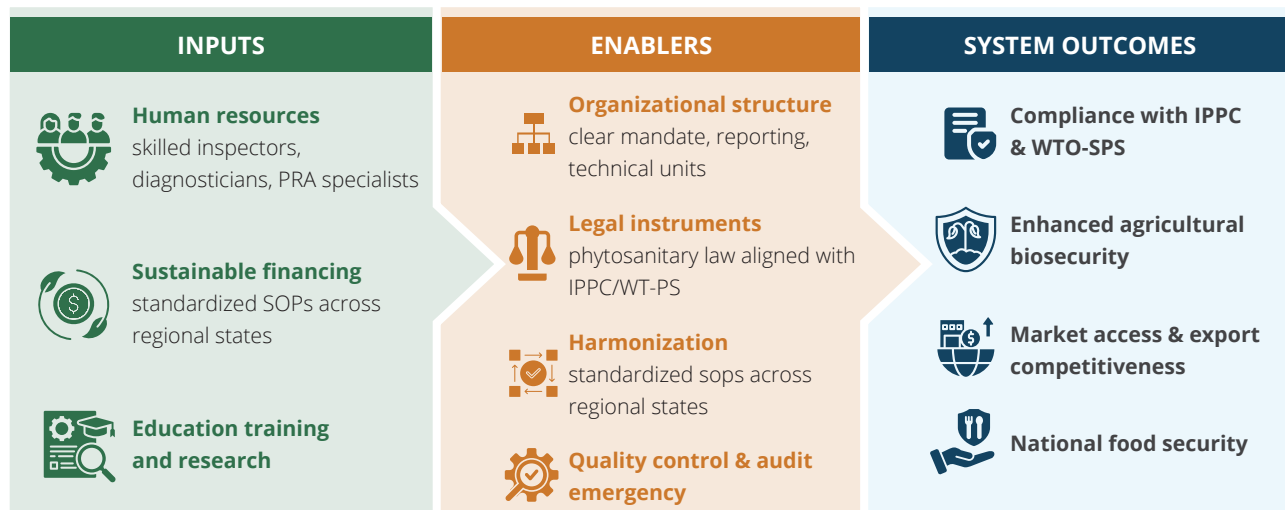
Phytosanitary system analysis using the Input-Process-Output (IPO) model

The strategic objectives described above were analysed using the Input-Process-Output (IPO) model to determine their respective roles as inputs and enabling factors for the transformation of Ethiopia's phytosanitary system. The analysis indicates that human resources, sustainable finance, education, training and research constitute the primary inputs to the system. These inputs influence four enabling factors, namely organizational structure, legal instruments, SOPs, and quality control and audit mechanisms, which collectively support the expected outcomes and contribute to strengthening Ethiopia's phytosanitary system.

In general, phytosanitary capacity represents a multi-dimensional system in which each strategic objective functions as a subsystem contributing to the performance of the national plant protection framework. Human resource development and infrastructural investments provide the operational capabilities (knowledge, diagnostic technology, inspection facilities and digital platforms) that allow phytosanitary tasks to be executed with scientific accuracy. Without these technical inputs, the system lacks the precision and reliability necessary for pest detection, risk assessment and certification in line with the International Plant Protection Convention (IPPC) and the requirements of the WTO-SPS Agreement.

FIGURE 6.

Schematic presentation of inputs and enablers to strengthen phytosanitary capacity of the Ethiopian NPPD



The organizational structure, legal instruments and harmonization mechanisms operate as institutional enablers. A fit-for-purpose organizational architecture ensures clarity of mandates and minimizes institutional overlaps. At the same time, legal and regulatory instruments provide the authority necessary to enforce compliance with phytosanitary measures, implement quarantine regulations and manage transboundary pest risks. The harmonization of procedures across regional states provides regulatory coherence and ensures the elimination of procedural fragmentation that could otherwise create phytosanitary gaps, compromise pest control programmes and increase the probability of pest incursions across internal boundaries.

Sustainable financing functions as the stabilizing mechanism of the system. Without predictable and diversified financing streams, critical phytosanitary functions, such as pest surveillance, border inspections, diagnostic testing and emergency response, remain vulnerable to disruption. By embedding phytosanitary financing into national agricultural investment frameworks and by leveraging cost-recovery and donor-aligned funding models, the system achieves financial resilience and continuity of service delivery.

All these subsystems converge on the phytosanitary core functions: pest risk analysis, surveillance, diagnostics, import/export inspection and certification and pest outbreak response. These functions are the central operational axis of the NPPO. The effectiveness of their implementation depends on the strength of the system's inputs (HR and infrastructure), institutional enablers (organizational structure, legal framework and harmonization mechanisms), and stabilizing factors (sustainable financing).

This integrative model ensures that Ethiopia's phytosanitary system will not only be technically competent but also institutionally coherent, legally enforceable, financially sustainable and regionally harmonized. In technical terms, it will represent a systems-based approach to phytosanitary capacity development, where the interplay of human, institutional, legal, infrastructural and financial dimensions collectively safeguard agricultural biosecurity and market access.

Strategic priority interventions in 2026–2030

The priority strategic interventions outlined below are key to establishing and operating a robust phytosanitary system. Together, they form a comprehensive framework to protect plant health, ensure biosecurity and facilitate the safe international trade of plants. Hence, the Ethiopian phytosanitary system must address these strategic areas over the next five years, while also fulfilling the seven strategic objectives outlined earlier.

Capacity development:

Training and providing resources to personnel for effective implementation of phytosanitary measures.



Phytosanitary certification:

Making sure exported plant products meet international standards.



Pest risk analysis:

Evaluating potential risks related to importing and exporting plants and plant products.



Control and eradication measures:

Implementing suitable strategies to control and eliminate pests and diseases.



Surveillance and monitoring:

Regularly checking for pests and diseases to enable early detection of outbreaks.



Trade regulations:

Setting clear rules for importing and exporting plant products.



Strategic investment overview based on the logical framework

Over the five-year implementation period, the proposed national phytosanitary capacity development strategy will require targeted investment to improve Ethiopia's ability to manage plant health threats and safeguard agricultural trade and productivity. The total estimated cost for implementing the five-year phytosanitary strategy is ETB 3,085,000,000, equivalent to approximately USD 23,022,388 based on the exchange rate of ETB 134 to USD 1.

The investment framework is structured around the seven key strategic objectives described earlier, each designed to address a significant gap in the current phytosanitary system.

Human resources capacity development



Investments of approximately **ETB 150 million** are **needed** to develop a competent and well-resourced workforce. This includes recruitment, curriculum integration, structured training and the introduction of performance-based systems to retain qualified staff.

Infrastructural capacity development



Infrastructure development, especially the establishment of modern diagnostic laboratories, digital information systems, inspection facilities and data platforms, will absorb over **ETB 1.5 billion**. These investments are essential for surveillance, diagnostics, data management and efficient border operations.

Fit-for-purpose organizational structure



Approximately **ETB 50 million** should be dedicated to aligning the NPPO's structure with its core mandates, including the establishment of specialized units for surveillance, eradication and coordination with border control and regional authorities.

Capacity for core phytosanitary functions



More than **ETB 100 million** will be invested to strengthen operational systems, audit mechanisms and quality assurance frameworks. This includes the development of standard operating procedures (SOPs), operational manuals and digital traceability tools to support import and export certification and pest management activities.

Sustainable financing of phytosanitary operations



An estimated **ETB 1.2 billion** will be mobilized through government budget allocations, development partner support, self-generated revenue and contingency financing mechanisms to ensure long-term operational sustainability.

Legal instruments



Approximately **ETB 50 million** will be invested in strengthening the legal framework, including the revision and implementation of phytosanitary legislation to introduce enforceable mandates for surveillance, certification, traceability, pest eradication and inter-agency coordination.

Harmonization of phytosanitary procedures among state governments



An additional **ETB 35 million** will support regional and intergovernmental collaboration, including the harmonization of phytosanitary procedures, the establishment of information-sharing platforms and the coordination of surveillance across jurisdictions.



Chickpea stack in Cheffedonsa, Eastern Shewa Ethiopia
(Source: ICARDA information hub)

TABLE 5.

Logical framework for Ethiopia's phytosanitary system organized by strategic objectives.

STRATEGIC OBJECTIVE AND OUTPUT	ACTIVITY	SUB-ACTIVITY	REQUIRED COST	RESPONSIBLE ENTITY	TIMELINE
Strategic objective 1: Human resources capacity development					
1. Competitive salary, retention and performance-based incentive systems implemented to attract and retain qualified staff.	Activity 1.1. Implement a competitive salary and staff retention framework.	Conduct salary benchmarking study.	1,500,000	NPPO HR, MoA	2026
		Advocate for budgetary approval of revised salary scales.	200,000	NPPO, MoA	2026–2027
		Implement performance-based incentives.	50,000,000	NPPO, Civil Service commission (CSC), MoF	2027–2029
		Develop retention measures, including allowances and career progression pathways.	5,000,000	NPPO HR, MoA	2027–2029
	Activity 1.2. Establish a performance-based incentive system.	Develop and approve performance evaluation criteria.	2,500,000	NPPO HR, CSC	2028
		Implement a reward and recognition system.	10,000,000	NPPO HR	2027–2029
		Introducing digital performance tracking tools.	7,500,000	NPPO IT & HR	2028–2030
		Conduct staff training on performance expectations and introduce accountability measures.	5,000,000	HR & Training Department	2028–2030
2. Human resources strengthened in terms of number, qualification and technical competence across NPPO functions, including import inspection, surveillance and pest eradication.	Activity 2.1. Boost human resources in terms of qualification, number and competence.	Include phytosanitary principles and practices in the academic curricula of agriculture teaching universities.	5,000,000	HLI, NPPO, FAO	2026–2027
		Strengthen agriculture network to support knowledge generation and exchange.	10,000,000	HLI, NPPO, FAO	2026–2027
		Organize trainings using these knowledge sources	15,000,000	HLI, NPPO, FAO	2026–2027
		Evaluate performance and competency after trainings are completed.	No cost	HLI, NPPO, FAO	2026–2027
	Activity 2.2. Increase the professional diversity of staff working in import inspection and provide specialized long-term training.	Recruit staff, identify training needs and create a tailored capacity-building programme.	17,000,000	EAA HR, PQR	2026–2027
		Partner with universities and technical institutes to deliver specialized training.	10,000,000	EAA HR, PQR	2026–2027
		Develop proposals to secure international funding or grants.	6,300,000	NPPO HR	2026–2027
		Establish agreements with international organizations for technical assistance and resource sharing.	No cost	NPPO HR	2026–2027
	Activity 2.3. Strengthening sustainable human resource development.	Develop a HR development plan to increase recruitment and retention of skilled personnel.	900,000	NPPO HR, HLI	2026–2027
		Establish partnerships with universities to create specialized training programmes.	900,000	NPPO HR, HLI	2026–2027
		Secure funding for training programmes from development partners.	350,000	NPPO HR, HLI	2026–2027
		Implement incentive structures to improve retention and motivation.	5,000,000	NPPO HR, HLI	2026–2027
		Utilize e-learning and virtual training to enhance skills in a cost-effective manner.	3,000,000	NPPO HR, HLI	2026–2027

Strategic Objective and Output	Activity	Sub-Activity	Required Cost	Responsible Entity	Timeline
3. Enhanced and targeted in-service training programmes developed and implemented for NPPO staff, inspectors and specialized units.	Activity 3.1. Design and deliver enhanced training and capacity-building programmes.	Develop a structured phytosanitary training programme.	2,000,000	NPPO, HLI, EIAR	2027–2029
		Partner with universities and research bodies to offer specialized courses.	500,000	NPPO, HLI, EIAR	2027–2029
		Conduct annual training programme (approximately 50 staff per year)	10,000,000	NPPO, External Trainers	2028–2030
	Activity 3.2. Build EAA staff capacity to provide effective and efficient phytosanitary service including establishing and maintaining pest-free areas.	Identify the training topics and develop training manuals.	1,000,000	NPPO, FAO	2028–2030
		Solicit sufficient funds and provide skill-based training.	10,000,000	NPPO, FAO	2028–2030
		Monitor and evaluate capacity building and update training manuals accordingly.	2,500,000	NPPO, FAO	2028–2030
Strategic Objective 2: Infrastructural capacity development					
4. NPPO facilities, critical infrastructure, inspection points, laboratories, equipment, transport and consumables upgraded and maintained.	Activity 4.1. Upgrade NPPO infrastructure and digital systems.	Implement mentorship and knowledge transfer programmes.	1,000,000	NPPO	2026
		Secure funding for infrastructure improvements.	1,000,000	NPPO, MoA, Donors	2027
		Establish modern diagnostic labs and improve office facilities. Upgrade NPPO laboratories (5 laboratories).	75,000,000	NPPO, Contractors	2027
		Digitalize NPPO services (e-certification and tracking system). Upgrade border inspection stations at 3 major points of entry.	60,000,000	NPPO, Customs Authority	2027
		Provide staff with IT training.	2,000,000	NPPO, MoA	2027
	Activity 4.2. Address critical facility and infrastructure requirements.	Leverage the flagship programme (FSRP).	500,000,000	MoA, NPPO, FAO	2029–2030
		Develop projects and mobilize financial resources.	500,000,000	MoA, NPPO, FAO	2029–2030
		Engage UN agencies (e.g. FAO) and the WTO to mobilize financial resources.	100,000,000	MoA, NPPO, FAO	2029–2030
	Activity 4.3. Equip inspection points with the necessary equipment and supplies to conduct effective import inspections.	Strengthen the establishment of national laboratories.	1,000,000,000	MoA, NPPO, FAO	2029–2030
		Procure pest diagnostic equipment for inspections and establish a maintenance schedule.	500,000,000	MoA, NPPO, FAO	2029–2030
		Deploy digital tools for monitoring and data collection.	20,000,000	MoA, NPPO, FAO	2029–2030
		Expand pest diagnostics service.	50,000,000	MoA, NPPO, FAO	2029–2030
		Ensure steady supply of consumables.	10,000,000	MoA, NPPO, FAO	2029–2030
		Introduce and utilize advanced pest detection technologies (e.g. AI based tools).	10,000,000	MoA, NPPO, FAO	2029–2030

STRATEGIC OBJECTIVE AND OUTPUT	ACTIVITY	SUB-ACTIVITY	REQUIRED COST	RESPONSIBLE ENTITY	TIMELINE
	Activity 4.4. Secure sufficient budget allocations and construct physical facilities.	Engage government decision-makers and develop fundable projects.	1,500,000.00	MoA, NPPO, FAO	2029–2030
		Proactively engage potential donors to mobilize funding.	150,000.00	MoA, NPPO, FAO	2029–2030
		Involve international and regional partners when building the critical facilities needed to enhance field operations.	1,500,000.00	NPPO, FAO, WTO, CABI etc.	2029–2030
	Activity 4.5. Improve the availability of equipment and transport.	Conduct a needs assessment to determine critical equipment gaps.	900,000	EAA, FAO	2029–2030
		Prioritize funding requests for transport and equipment procurement.	800,000	EAA, FAO	2029–2030
		Engage development partners to support acquisition of modern inspection tools.	6,000,000	EAA, FAO	2029–2030
		Improve maintenance strategies to extend equipment lifespan.	4,000,000	EAA, FAO	2029–2030
		Explore leasing options for vehicles instead of direct purchase.	3,500,000	EAA, FAO	2029–2030
5. Digital platforms, information-sharing systems, and databases established.	Activity 5.1. Implement a digital information-sharing system.	Develop a centralized information management system.	3,000,000	NPPO	2027–2028
		Establish standard communication protocols.	300,000	NPPO	2027–2028
		Conduct training in information management.	500,000	NPPO	2027–2028
		Institutionalize interdepartmental meetings.	50,000	NPPO	2028–2029
		Strengthen stakeholder engagement mechanisms.	300,000	NPPO	2028–2029
	Activity 5.2. Establish a database system for the NPPO.	Inventory available data sources.	1,000,000	NPPO	2028–2029
		Consolidate all available data in one centralized system.	5,000,000	NPPO	2028–2029
		Establish an expert group to organize the data.	8,000,000	NPPO	2028–2029
		Establish an IT team to create the data sharing platform.	12,000,000	NPPO	2028–2029
		Create user access mechanisms for stakeholders.	5,000,000	NPPO	2028–2029
	Activity 5.3. Establish a laboratory information exchange and management system for pest diagnostics.	Identify the constraints of pest diagnostics information exchange.	150,000	NPPO	2029–2030
		Develop or adopt laboratory information exchange and management system.	1,500,000	NPPO	2029–2030
		Train pest diagnostics teams and strengthen ICT capacity.	250,000	NPPO	2029–2030
		Establish robust cyber security measures to protect pest diagnostic data.	3,000,000	NPPO	2029–2030
	Activity 5.4. Create a database for pest checklists and an information exchange platform.	Developed and maintain a platform to access and exchange pest information.	600,000	NPPO, FAO, HLI, EIAR, MoA	2029–2030

STRATEGIC OBJECTIVE AND OUTPUT	ACTIVITY	SUB-ACTIVITY	REQUIRED COST	RESPONSIBLE ENTITY	TIMELINE
Strategic Objective 3: Fit-for-purpose organizational structure					
6. NPPO organizational units, roles, vertical and horizontal linkages, and specialized units clearly defined and operationalized.	Activity 6.1. Define organizational units and roles within EAA and NPPO.	Conduct a comprehensive organizational assessment.	200,000	NPPO, FAO	2026
		Define new organizational units and roles.	50,000	NPPO, FAO	2026
		Develop a revised organizational chart.	120,000	NPPO, FAO	2026
		Present the revised organizational structure to stakeholders for approval.	50,000	NPPO, FAO	2026
	Activity 6.2. Define vertical and horizontal linkages within EAA and with regional regulatory authorities.	Develop internal communication frameworks.	150,000	NPPO, FAO	2026
		Establish external communication linkages with regional regulatory authorities.	250,000	NPPO, FAO	2026
		Implement training on new communication processes.	500,000	NPPO, FAO	2026
	Activity 6.3. Establish a core surveillance unit.	Create additional staff positions to support the core surveillance unit.	1,200,000	NPPO, EAA HR	2027
		Establish a career structure for staff of the surveillance unit.	No cost	NPPO, EAA HR	2027
		Integrate phytosanitary subjects into the curricula of agriculture universities.	Costed in import module	NPPO, HLI	2027
		Provide training for staff recruited for the surveillance unit.	1,000,000	NPPO HR	2027
		Establish a consultation platform for surveillance involving all relevant stakeholders.	500,000	NPPO, FAO	2027
	Activity 6.4. Establish a new pest eradication unit in the EAA organizational structure.	Conduct internal consultations and engage with the Civil Service Commission to establish the unit.	50,000	NPPO	2027
		Revise the existing organizational structure to incorporate the eradication unit.	50,000	NPPO	2027
		Define the required number, qualifications, and experience of staff.	50,000	NPPO	2027
		Assign staff and provide in-service technical training.	1,000,000	NPPO	2027
	Activity 6.5. Develop an organizational structure linking all relevant entities involved in import inspection.	Revise the organizational structure.	500,000	NPPO	2027
		Fill the revised structure with the required personnel for import inspections.	No cost	NPPO	2027
		Create an enabling work environment to ensure efficient import inspection services.	5,000,000	NPPO	2027
	Activity 6.6. Establish a pest-free area core team.	Consult with the civil service agency regarding the creation of the unit.	50,000	NPPO	2027
		Recruit the required staff and provide tailored introductory training.	1,500,000	NPPO	2027
		Deploy staff to high-risk locations to conduct regular assessments of pest-free areas.	0.00	NPPO	2027

STRATEGIC OBJECTIVE AND OUTPUT	ACTIVITY	SUB-ACTIVITY	REQUIRED COST	RESPONSIBLE ENTITY	TIMELINE
7. Coordination and communication mechanisms strengthened among NPPO headquarters, border posts, laboratories, regional authorities, international trade partners and other relevant stakeholders.	Activity 7.1. Improve networking and institutional collaboration.	Develop a centralized digital platform for inter-agency coordination.	10,000,000	NPPO, IT Consultants	2027–2029
		Establish and formalize memoranda of understanding (MOUs) with research institutions, customs authorities and agriculture agencies.	500,000	NPPO, HLI, Customs, MoA	2027–2029
		Procure IT equipment and software.	8,000,000	NPPO, IT Suppliers	2027–2029
		Train staff in new digital systems and conduct quarterly stakeholder coordination meetings.	2,000,000	NPPO IT Team	2027–2029
	Activity 7.2. Strengthen communication and coordination within the NPPO.	Define priority areas for information sharing.	5,000,000	NPPO, EAA, MoA, FAO	2027–2029
		Establish an information-sharing platform.	20,000,000	NPPO, EAA, MoA, FAO	2027–2029
		Regularly update and maintain the platform.	2,000,000	NPPO, EAA, MoA, FAO	2027–2029
	Activity 7.3. Strengthen coordination for targeted pest surveillance among stakeholders.	Secure a sustainable budget for surveillance.	Refer to the budget expected to be allocated annually by the government.	NPPO, EAA, MoA, FAO	2027–2029
	Activity 7.4. Harmonize working relations with regional economic communities.	Identify relevant economic communities and define areas of harmonization.	No cost	NPPO, EAA, MoA, FAO	2027–2029
		Establish institutional linkages and develop MoU.	500,000	NPPO, EAA, MoA, FAO, RECs	2027–2029
		Collaborate on strengthening import inspections and sharing new pest alerts.	20,000,000	NPPO, EAA, MoA, FAO, RECs	2027–2029
	Activity 7.5. Improve coordination between HQ and border post operators.	Establish a real-time digital communication system between HQ and border posts.	2,000,000	EAA	2027–2029
		Develop a clear reporting framework with defined roles for HQ and field staff.	1,000,000	EAA	2027–2029
		Conduct regular virtual and physical coordination meetings.	1,200,000	EAA	2027–2029
		Establish operation harmonization mechanism for border posts.	800,000	EAA	2027–2029
		Implement performance monitoring systems to improve coordination.	1,500,000	EAA	2027–2029

STRATEGIC OBJECTIVE AND OUTPUT	ACTIVITY	SUB-ACTIVITY	REQUIRED COST	RESPONSIBLE ENTITY	TIMELINE
Strategic Objective 4: Strengthening the capacity for effective implementation of phytosanitary core activities					
8. Standardized, effective and documented operational procedures developed and implemented.	Activity 8.1. Develop appropriate technical and operational procedures.	Identify potential contributors in key stakeholder organizations.	50,000	NPPO	2026
		Review and adapt ISPM guidelines to fit the country's needs and apply the adapted procedures.	4,650,000	NPPO, FAO, HLI	2026
		Validate, approve and publish the technical procedures and provide training for technical staff.	250,000	NPPO, FAO, HLI	2026
		Develop standard procedures for quality control, sample handling and processing, and performance evaluation.	150,000	NPPO, FAO, HLI	2026
		Mobilize resources to raise awareness and engage stakeholders in the implementation of pest diagnostics procedures.	250,000	NPPO, FAO, HLI	2026–2027
		Provide training for staff from key stakeholders institutions and relevant units on the implementation of pest diagnostics procedures.	1,500,000	NPPO, FAO, HLI	2026–2027
		Monitor and evaluate performance following the implementation of the procedures.	150,000	NPPO, FAO, HLI	2026–2027
	Activity 8.2. Enhance the efficiency of NPPO operational processes by improving operational procedures.	Review existing operational processes.	600,000	NPPO, MoA, FAO	2026–2027
		Redesign core NPPO operational processes.	1,000,000	NPPO, MoA, FAO	2028–2030
		Develop and standardize operational manuals for core NPPO activities.	3,000,000	NPPO, MoA, FAO	2028–2030
		Test and refine the redesigned processes.	400,000	NPPO, MoA, FAO	2028–2030
		Disseminate the operational manuals to staff and provide training on their application.	6,000,000	NPPO, MoA, FAO	2028–2030
	Activity 8.3. Develop or adapt pest eradication procedures.	Evaluate and establish well-defined pest eradication procedures for new pest outbreaks.	2,000,000	NPPO, MoA, EIAR, CABI and FAO	2027–2028
		Prepare action plans to guide, coordinate and implement pest eradication responses.	50,000	NPPO	2027–2028
		Mobilize resources to raise awareness, engage communities and implement planned eradication programmes.	5,000,000	NPPO and FAO	2027–2028
		Provide training for staff and stakeholders on the implementation of pest eradication procedures.	5,000,000	NPPO and FAO	2027–2028

STRATEGIC OBJECTIVE AND OUTPUT	ACTIVITY	SUB-ACTIVITY	REQUIRED COST	RESPONSIBLE ENTITY	TIMELINE
	Activity 8.4. Develop standardized PRA operational manuals and procedures.	Establish a national task force to develop PRA manuals.	500,000	NPPO, HLI	2027–2028
		Benchmark best practices based on international guidelines (FAO/IPPC).	2,000,000	NPPO, FAO	2027–2028
		Train staff in the implementation of PRA manuals.	1,500,000	NPPO, MoA	2027–2028
		Distribute PRA manuals to NPPO units and relevant stakeholders.	3,000,000	NPPO, Training Institutions	2027–2028
	Activity 8.5. Develop and implement export certification procedures.	Develop and implement a national export certification manual aligned with international standards.	1,500,000	NPPO	2026–2027
		Establish a technical team to draft, review and regularly update work instructions.	1,000,000	NPPO	2026–2027
		Engage stakeholders (exporters and inspectors) in developing practical operational guidelines.	800,000	NPPO	2026–2027
		Digitize procedures to ensure accessibility and uniform implementation.	2,000,000	NPPO	2026–2027
9. Periodic review and performance evaluation systems established.	Activity 9.1. Implement a periodic review and performance evaluation system.	Train staff in new procedures to ensure compliance and efficiency.	1,500,000	NPPO	2026–2027
		Develop a monitoring and evaluation (M&E) framework with defined KPIs.	1,500,000	NPPO, MoA	2026–2027
		Establish a PRA evaluation team within the NPPO.	1,000,000	NPPO	2026–2027
		Conduct annual performance reviews and publish evaluation reports.	2,500,000	NPPO	2026–2027
10. Cooperation and information-sharing systems operationalized for import inspections and export traceability.	Activity 10.1. Establish a cooperation and information-sharing system for the clearance of inspected commodities.	Use evaluation findings to refine PRA methodologies and evaluation practices.	3,000,000	NPPO, MoA	2026–2027
		Identify relevant stakeholders and develop modalities of cooperation.	No cost	NPPO	2028–2030
		Define priority areas for information sharing.	No cost	NPPO	2028–2030
		Establish the information sharing hub.	12,000,000	NPPO FAO	2028–2030
		Regularly update the cooperation platform.	2,000,000	NPPO, RRB, PPD and FAO	2028–2030

STRATEGIC OBJECTIVE AND OUTPUT	ACTIVITY	SUB-ACTIVITY	REQUIRED COST	RESPONSIBLE ENTITY	TIMELINE
11. Quality assessment, internal and external audit, and monitoring systems institutionalized.	Activity 11.1. Institutionalize a quality assessment system.	Develop and approve a QA policy aligned with international standards.	3,500,000	NPPO, IES	2026–2027
		Establish dedicated QA team.	2,000,000	NPPO, IES	2026–2027
		Conduct staff training on quality assessment methodologies.	4,000,000	NPPO, IES	2028–2030
		Implement a digital QA information-tracking system.	6,000,000	NPPO, IES	2028–2030
		Maintain continuous Improvement of the quality assessment system.	3,000,000	NPPO, IES	2028–2030
	Activity 11.2. Develop and pilot a phytosanitary audit system.	Designing the audit structure and procedures.	2,000,000	NPPO	2026
		Defining roles, responsibilities and workflows.	300,000	NPPO	2026
		Creating tools, criteria and checklists.	500,000	NPPO	2026
		Establishing reporting and follow-up procedures.	1,000,000	NPPO	2026–2027
		Pilot and institutionalize the audit system.	300,000	NPPO	2026–2027
	Activity 11.3. Implement the audit system and conduct internal and external audits.	Establish an internal audit mechanism within the NPPO.	150,000	NPPO, FAO	2027–2030
		Establish external audit mechanism (including audits of farms, exporters, laboratories, and third parties.	250,000	NPPO, FAO	2027–2030
		Schedule and conduct audits using the internal and external mechanisms.	1,500,000	NPPO, FAO	2027–2030
		Document audit findings and report the results in a timely manner.	150,000	NPPO, FAO	2027–2030
		Implement corrective actions to ensure compliance, accountability and continuous improvement of the system.	250,000	NPPO, FAO	2027–2030
12. Adequately resourced contingency plan for surveillance and eradication of new pests developed.	Activity 12.1. Establish a responsive surveillance strategy and programme.	Promote policy revisions to support capacity development for pest surveillance.	100,000	NPPO, FAO, MoA	2026–2027
		Develop projects and mobilize resources for pest surveillance.	200,000	NPPO, FAO, MoA	2026–2027
		Strengthen cooperation among institutions involved in pest surveillance.	50,000	NPPO, FAO, MoA	2026–2027
		Secure regular government budget allocations for pest surveillance activities.	No cost	NPPO, FAO, MoA	2026–2027

STRATEGIC OBJECTIVE AND OUTPUT	ACTIVITY	SUB-ACTIVITY	REQUIRED COST	RESPONSIBLE ENTITY	TIMELINE
	Activity 12.2. Develop strategy and programme for the eradication of new pests.	Establish a legal framework mandating pest eradication programme to ensure regulatory compliance.	500,000	NPPO, FAO, MoA	2026–2027
		Strengthen institutional coordination and establish early warning and rapid response systems.	300,000	NPPO, FAO, MoA	2026–2027
		Develop monitoring plans, response networks and recognize focal points for new pest eradication.	12,000,000	NPPO, MoA, RBoA, EIAR, HLI and FAO	2028–2030
		Develop pests identification manuals and conduct awareness programmes for farmers and stakeholders.	1,000,000	NPPO, MoA, RBoA, EIAR, HLI and FAO	2028–2030
		Adopt internationally recognized guidelines and best practices for pest eradication.	500,000	NPPO, FAO	2028–2030
		Procure the necessary tools, equipment and pesticides to implement eradication measures and verify eradication success.	500,000	NPPO, FAO	2028–2030
		Monitor and evaluate pest eradication efforts	3,000,000	NPPO, FAO	2028–2030
	Activity 12.3. Strengthen capacity to eradicate new pests.	Revise the human resource development plan to support pest eradication activities.	50,000	NPPO HR	2028–2030
		Establish the physical infrastructure and resources required for the authority to respond to and eradicate new pests.	10,000,000	NPPO HR	2028–2030
		Design sustainable financing mechanisms to support pest eradication programmes.	5,000,000	EAA (Finance)	2028–2030
		Develop coordination platform to utilize expertise from relevant institutions.	3,000,000	NPPO, FAO	2028–2030
Strategic Objective 5: Sustainable financing of phytosanitary operations					
13. Annual budget increased and sufficient financial resources secured.	Activity 13.1. Increase government budget allocations and mobilize funding from additional financial sources.	Request realistic budget from government treasury.	700,000,000	NPPO	2026
		Proactively work to get approval to retain self-generated revenue.	300,000,000	NPPO	2026
		Develop fundable projects and mobilize financial resources from development partners.	5,000,000.00	NPPO	2027–2030

STRATEGIC OBJECTIVE AND OUTPUT	ACTIVITY	SUB-ACTIVITY	REQUIRED COST	RESPONSIBLE ENTITY	TIMELINE
14.Efficient and transparent procurement system established and applied.	Activity 14.1. Establish and implement a responsive and efficient procurement system.	Conduct a comprehensive assessment of the needs for pest diagnostics equipment, supplies and spare parts.	350,000	NPPO	2026–2027
		Develop a five-year procurement plan and obtain the necessary approvals.	150,000	NPPO	2027–2028
		Secure the funding from government, development partners or loan providers.	150,000	NPPO	2027–2028
		Engage with the government for special procurement arrangement.	150,000	NPPO	2027–2028
Strategic Objective 6: Legal instruments					
15. Legal and regulatory frameworks developed to support cooperation, delegation, financial autonomy, emergency response and eradication of new pests.	Activity 15.1. Establish the legal foundation for the development and adoption of phytosanitary procedures.	Draft and enact legal provisions requiring the development and regular updating of phytosanitary procedures.	1,000,000	NPPO, MoA Legal Directorate	2026
		Establish internal legal drafting teams within the NPPO or obtain support from the Ministry of Agriculture (MoA) legal unit.	500,000	NPPO, Civil Service Comm.	2026
		Draft and enact legal provisions to develop and update phytosanitary procedures.	1,000,000	NPPO, MoA Legal team	2026–2027
		Develop and institutionalize SOPs based on ISPMs.	1,500,000	NPPO, FAO	2026–2027
	Activity 15.2. Develop and implement legal mechanisms for emergency phytosanitary response funding.	Develop legal frameworks for declaring and responding to phytosanitary emergencies.	700,000	NPPO, DRM Commission	2026–2027
		Enact legal provisions for emergency response to new pest outbreaks.	800,000	NPPO, parliament	2026–2027
		Based on the legal provisions, develop a phytosanitary emergency response plan.	600,000	NPPO, DRM,RRPs	2026–2027
		Establish a contingency or emergency fund within the MoA or through pooled contributions from development partners.	2,000,000	MoA, MoF, Donors	2026–2027
	Activity 15.3. Develop and implement an enabling legal framework for cooperation and delegation in phytosanitary service delivery.	Amend plant health legislation to include legal provisions for inter-agency MoUs and delegated authority.	300,000	NPPO, HLI, Customs	2027–2028
		Define service-level standards and accountability mechanisms.	1,000,000	NPPO, Private Sector	2027–2028
		Pilot third-party certification schemes under NPPO oversight.	600,000	NPPO, Private Sector	2027–2028
	Activity 15.4. Approve legal regulations to support the eradication of new pests.	Organize technical working group and develop directives for conducting pest eradication programmes.	500,000	NPPO, FAO	2026–2027
		Seek approval of the directives and raise awareness among key stakeholder institutions.	2,500,000	NPPO	2026–2027
		Establish sufficient legal authority to implement eradication directives and conduct regular monitoring and evaluation on their implementation.	4,500,000	NPPO	2026–2027

STRATEGIC OBJECTIVE AND OUTPUT	ACTIVITY	SUB-ACTIVITY	REQUIRED COST	RESPONSIBLE ENTITY	TIMELINE
16. Legal and financial mechanisms established to support phytosanitary research, evidence-based policymaking and compliance monitoring.	Activity 16.1. Provide legal and financial support for phytosanitary research and evidence-based policymaking.	Include phytosanitary research as a core function in the legal mandate of the NPPO.	400,000	NPPO, EIAR, HLI	2027–2028
		Develop funding mechanisms for applied research and pest diagnostics.	300,000	NPPO, EIAR, HLI	2027–2028
		Institutionalize MoU partnerships with universities and research centres.	1,500,000	NPPO, MoF, Donors	2027–2028
		Secure government funding to strengthen phytosanitary policymaking, research and advanced training in phytosanitary legislation.	9,000,000	NPPO	2027–2028
	Activity 16.2. Develop a legal framework for financial autonomy.	Engage legal experts to draft amendments.	300,000	NPPO	2027–2028
		Conduct advocacy campaigns with policymakers.	200,000	NPPO	2027–2028
		Enhance financial management controls.	400,000	NPPO	2027–2028
		Train NPPO finance personnel on best practices in fund allocation.	300,000	NPPO	2027–2028
17. Legal provisions implemented to ensure export traceability and clarify roles, responsibilities and follow-up procedures for non-compliance across NPPO functions.	Activity 17.1. Clarify and codify follow-up procedures for post-certification obligations and cases of non-compliance.	Revise legislation to include post-certification responsibilities and penalties.	600,000	NPPO, MoA	2028–2029
		Establish mandatory procedures for reporting, tracing and rectifying non-compliances.	500,000	NPPO	2028–2029
		Establish legal obligation for exporters to maintain phytosanitary security from certification through export.	2,500,000	NPPO, ICT	2028–2029
	Activity 17.2. Include provisions on traceability in the PPQ legislation.	Review existing international traceability legislation and draft a relevant legal provision.	150,000.00	NPPO	2028–2029
		Submit the draft provision for review by legal experts within the EAA and the MoA before incorporating into the draft PPQ legislation.	50,000.00	NPPO	2028–2029
		Consult with colleagues in PM office for inclusion of the article in the draft PPQ before approval by the house of representatives.	50,000.00	NPPO	2028–2029
	Activity 17.3. Enhance the traceability system for export consignments.	Mobilize funding for the development of traceability systems through international organizations.	500,000	NPPO, FAO, EPHEA	2028–2029
		Develop a digital traceability system to monitor export consignments.	3,000,000	NPPO, FAO, EPHEA	2028–2029
		Train exporters and inspectors on traceability requirements and procedures.	1,500,000	EAA, FAO, EPHEA	2029–2030
		Implement barcode or QR code tracking for export consignments.	2,000,000	EAA, FAO, EPHEA	2029–2030
		Strengthen enforcement of traceability regulations through regular audits.	500,000	EAA, FAO, EPHEA	2029–2030

STRATEGIC OBJECTIVE AND OUTPUT	ACTIVITY	SUB-ACTIVITY	REQUIRED COST	RESPONSIBLE ENTITY	TIMELINE
Strategic Objective 7: Harmonization of phytosanitary procedures among regional state governments					
18. NPPO's role in trade policy strengthened.	Activity 18.1. Strengthen the NPPO's role in trade policy.	Advocate for NPPO representation in trade policy discussions.	1,500,000	NPPO, MoA, MOTRI	2027
		Develop policy briefs on phytosanitary trade standards.	2,000,000	NPPO	2027
		Engage trade organizations (WTO, FAO, regional bodies) for technical support and conduct stakeholder consultations with exporters and importers.	1,000,000	NPPO, Private Sector	2027
		Implement compliance monitoring mechanisms.	5,000,000	NPPO, Customs commission	2027
	Activity 18.2 Promote evidence-based and risk-based decision-making in institutional involvement during the importation of planting materials.	Establish an inter-agency coordination framework.	1,000,000	NPPO, MoA	2028
		Conduct advocacy with policymakers to reinforce NPPO authority.	2,000,000	NPPO, MoA	2028
		Strengthen enforcement mechanisms for phytosanitary regulations.	3,500,000	NPPO	2028
		Streamline import permit approval based on PRA findings.	7,000,000	NPPO, ICT	2028
19. NPPO strategic and operational plans implemented and regularly updated.	Activity 19.1. Regularly update applicable strategic and operational plans.	Develop a pest identification manual.	1,000,000	EAA and FAO	2027–2030
		Review the existing pest diagnostics services.	150,000	NPPO, MOA, FAO	2027–2030
		Identify bottlenecks, prioritize key issues and develop a strategic plan to strengthen pest diagnostic services.	750,000	NPPO, MoA, HLI and FAO	2027–2030
		Obtain approval for the updated strategic and operational plans, raise stakeholder awareness and implement the approved plans.	5,000,000	NPPO	2027–2030
20. Operational readiness ensured through adequate human, financial and physical resources for post-certification compliance and PRA implementation.	Activity 20.1. Improve human, physical and financial capacities.	Revise the human resource development plan for pest diagnostic service.	150,000	NPPO	2029–2030
		Assess and strengthen the physical capacity required to carry out pest diagnostics.	150,000	NPPO (Labs)	2029–2030
		Design sustainable financing mechanisms to carry out pest diagnostics.	500,000	EAA (Finance)	2029–2030
		Develop a coordination platform to utilize expertise from other relevant institutions.	1,000,000	NPPO (Labs)	2029–2030
		Develop projects to strengthen staff capacity and mobilize additional financial resources to improve service delivery.	250,000	NPPO (Labs)	2029–2030

STRATEGIC OBJECTIVE AND OUTPUT	ACTIVITY	SUB-ACTIVITY	REQUIRED COST	RESPONSIBLE ENTITY	TIMELINE
	Activity 20.2. Strengthening human, physical and financial resources for PRA.	Advocate for increased government budget allocation for PRA.	No direct cost	NPPO, MoA	2029–2030
		Develop and implement capacity-building training for PRA staff.	5,000,000	NPPO, HLI, FAO	2029–2030
		Upgrade laboratory and surveillance infrastructure.	15,000,000	NPPO, MoA, Development Partners	2029–2030
		Secure international funding (FAO, WTO, IPPC) for PRA development.	No direct cost	NPPO, FAO	2029–2030
		Adopt digital PRA tools (GIS mapping, mobile data collection)	8,000,000	NPPO, ICT	2029–2030
	Activity 20.3. Improve communication of PRA-identified phytosanitary mitigation measures.	Develop a centralized online PRA information system.	10,000,000	NPPO, ICT	2029–2030
		Conduct stakeholder awareness workshops.	3,500,000	NPPO	2029–2030
		Implement real-time digital notification for phytosanitary risks.	2,000,000	NPPO	2029–2030
		Establish clear communication guidelines within the NPPO.	500,000	NPPO	2029–2030

Risk analysis overview

The Phytosanitary Capacity Evaluation (PCE) identified various system, structural and operational risks across Ethiopia's phytosanitary system. If left unaddressed, these risks could weaken the effectiveness of investments and reform efforts. The risk assessment focused on both on the likelihood of occurrence and the potential impact on service delivery, with risks prioritized according to severity (impact × likelihood).

KEY RISK AREAS

The key risk areas identified through the assessment are summarized below:

- **Phytosanitary legislation:** The most significant risks stem from delays in implementing new legal tools and weak enforcement systems. A limited understanding among lawmakers and poor coordination between agencies present substantial obstacles to legal reform and enforcement.
- **Legal instruments and policy coherence:** Gaps remain in the legal provisions supporting traceability, pest eradication and inter-agency coordination. These issues, combined with slow legislative processes, may hinder the development of a modern and responsive phytosanitary system.
- **Human and infrastructure capacity:** Shortages of qualified personnel, underfunded infrastructure and inadequate training programmes remain major risk factors. Capacity-building efforts may be hindered by limited funding, insufficient human resources and challenges related to career development and staff retention.

- **Organizational structure and strategy:** Unclear roles within the NPPO and delays in institutional restructuring reduce operational efficiency. Resistance to change and absence of established operational procedures are significant barriers to the effective and efficient implementation of core phytosanitary activities.
- **Operational systems and core functions:** Major risks include poor technical audit practices, weak information management systems, fragmented surveillance mechanisms and delays in pest diagnostics and eradication responses.
- **Sustainable financing and resource mobilization:** The risk of limited government funding and insufficient donor engagement remains high, particularly regarding long-term operational financing and emergency response capacity.
- **Regional and export coordination:** Inconsistent implementation of procedures, fragmented traceability systems and weak coordination among national and regional actors are key vulnerabilities in managing import/export processes and pest-free zones.

To address these risks, the strategy emphasizes strong political advocacy, improved stakeholder engagement, strengthened capacity development, institutional reforms and the mobilization of government and donor funding.

TABLE 6.**Risk matrix for Ethiopia's phytosanitary strategy, organized by key outputs.**

OUTPUT	RISK DESCRIPTION	ASSUMPTIONS	RISK LEVEL (1-3)	LIKELIHOOD (1-3)	IMPACT (R*P)	MITIGATION MEASURES
OUTPUT 1	Prolonged lawmaking processes, conflicting provisions in existing laws, and resistance of institutions to relinquish authority.	→ Inter-agency support exists. → Industry interest is present. → Institutional buy-in secured.	2	3	6	Ensure legal coherence. Secure political and institutional buy-in. Promote stakeholder inclusiveness. Accelerate approval procedures. Leverage external drivers.
	Overlapping institutional mandates and concerns regarding the implications of strict eradication measures.	→ Government prioritizes EAA capacity development in pest eradication.	3	2	6	Clarify institutional mandates through government action. Approve and enforce legislation for pest eradication.
OUTPUT 2	Chronic budget shortage, dependence on shifting donor priorities, and weak institutional coordination among research bodies.	→ Increased support from scientific community. → Institutions are willing to engage. → Funding commitments are secured.	3	2	6	Diversify funding sources and strengthen domestic financing. Institutionalize coordination mechanisms. Enhance efficiency and accountability in financial planning and monitoring systems. Establish contingency funding mechanisms.
OUTPUT 3	Delays in legislative approval, opposition from stakeholders fearing trade restrictions, and weak enforcement capacity.	→ The House of Representatives endorses the inclusion of traceability provisions into the new legislation.	2	2	4	Foster collaboration among relevant institutions to support the adoption and implementation of traceability legislation.
	Weak ICT infrastructure, limited technical expertise, and resistance from exporters fearing increased costs or bureaucracy.	→ Producers and exporters adopt digital traceability tools.	3	3	9	Implement phased pilot projects in key export regions Strengthen collaboration between partners and government institutions to address infrastructure constraints.

OUTPUT	RISK DESCRIPTION	ASSUMPTIONS	RISK LEVEL (1-3)	LIKELIHOOD (1-3)	IMPACT (R*P)	MITIGATION MEASURES
OUTPUT 4	Irregular government budget allocations, rigid civil service rules restricting salary increases, and staff migration to find higher-paying jobs.	→ Government approval of revised salary structure. → Adequate funding to retain competent staff received regularly.	3	3	9	Provide evidence based justification for salary revisions. Authorize remuneration through revenue-generating mechanisms.
OUTPUT 5	Rigid public service hiring frameworks, fiscal constraints, high staff turnover, limited specialized expertise, and poor professional development.	→ Legal restrictions are revised and required human capacity is developed and upgraded.	3	3	9	Mobilize external funding opportunities. Introduce structured training programmes, career paths and retention incentives. Develop plant protection curricula incorporating phytosanitary subjects.
OUTPUT 6	Limited financial resources to sustain programmes, high staff turnover, and weak alignment between training content and technical needs.	→ Partnerships with academic and training institutions are established.	3	3	9	Establish a dedicated training centre. Develop partnership with existing agricultural universities. Institutionalize knowledge management systems.
OUTPUT 7	High capital costs, rapid technological change requiring infrastructure replacement, competing government priorities, inflation, and reliance on donor support.	→ Government and donor funding secured. → Government gives due attention to proper implementation of the core phytosanitary services.	3	2	6	Develop project proposal and engage funding institutions and development partners. Identify alternative funding sources. Increase stakeholder engagement in funding allocation.
OUTPUT 8	Bureaucracy constraints to restructuring, competing institutional priorities, and limited funding for staffing and operations.	→ Restructuring done and accepted by high level decision makers.	3	2	6	Engage and aware policymakers Restructure the organizational setup of the authority
	Overlapping mandates, resistance to role reassignment, and lack of clarity in reporting lines.	→ Communication protocols are effectively implemented.	3	3	9	Define clear roles. Allocate budget and staff resources. Develop evaluation mechanisms.

OUTPUT	RISK DESCRIPTION	ASSUMPTIONS	RISK LEVEL (1-3)	LIKELIHOOD (1-3)	IMPACT (R*P)	MITIGATION MEASURES
OUTPUT 9	Fragmented information flows, weak institutional culture of collaboration, and lack of effective communication platforms.	→ Efficient communication mechanism established.	2	2	4	Upgrade ICT systems. Clarify roles and allocate resources. Establish formal coordination mechanisms.
OUTPUT 10	Insufficient technical consultation or harmonization with international standards, inconsistent application by staff, poor documentation practices and resistance to change.	→ Government provides attractive remuneration to recruit qualified experts. → EAA supports development and adaptation of working procedures.	3	3	9	Provide adequate human resources and financial support. Implement technical capacity-building programmes. Establish monitoring and evaluation frameworks.
OUTPUT 11	Weak institutional accountability culture, lack of skilled evaluators, and limited funding to sustain regular reviews.	→ NPPO commits to developing performance review mechanisms	3	2	6	Use evaluation results for adaptive management. Promote a learning environment and share good practices.
	Misunderstanding of audits as punitive rather than a trigger for continuous improvement	→ Operational and technical improvements are implemented.	2	3	6	Provide capacity building training. Create wider awareness among staff of the value of audits.
OUTPUT 12	Weak ICT infrastructure, unreliable internet connectivity, and lack of skilled ICT personnel.	→ Reliable information sharing platform established. → Staff adapt digital tools.	3	3	9	Improve access to pest information systems. Recruit ICT professionals and allocate sufficient budget.

OUTPUT	RISK DESCRIPTION	ASSUMPTIONS	RISK LEVEL (1-3)	LIKELIHOOD (1-3)	IMPACT (R*P)	MITIGATION MEASURES
OUTPUT 13	Weak inter-agency collaboration, poor ICT infrastructure, and reluctance to share sensitive data.	→ Shared responsibilities among different institutions involved in import inspection are recognized.	3	3	9	Establish formal coordination frameworks with joint work plans and shared accountability. Implement phased ICT system upgrades with training and technical support. Adopt clear data governance policies and secure digital platforms.
OUTPUT 14	Insufficient funding for equipment, transport and consumables needed for field operations.	→ Civil service supports approval of critical NPPO units. → Staff familiar with international phytosanitary trade standards. → Resources mobilized from development partners. → Stakeholders participate in pest surveillance.	3	3	9	Get civil service approval for the establishment of core units. Improve access to updated global pest information.
OUTPUT 15	Competing government priorities, inflation and reliance on donor support.	→ Government gives due attention to pest free area identification, establishment and maintenance.	3	2	6	Timely and proper planning to secure budget from government treasury. Forge mechanisms for stakeholder engagement and public-private partnership.
OUTPUT 16	Rigid government procurement regulations, lengthy approval processes, and susceptibility to unscrupulous deeds.	→ Provision established for fast-track procurement of lab equipment and consumables (e.g. primers, reagents, detection kits)	3	3	9	Raise awareness among government authorities. Secure legal provisions for special procurement arrangement.

OUTPUT	RISK DESCRIPTION	ASSUMPTIONS	RISK LEVEL (1-3)	LIKELIHOOD (1-3)	IMPACT (R*P)	MITIGATION MEASURES
OUTPUT 17	Continued bureaucratic interference due to overlapping mandates and political interests.	→ Policymakers understand the risk of unregulated plant imports introducing quarantine pests.	3	3	9	Clarify legal and policy responsibilities. Engage relevant institutions early in dialogue and reform processes. Promote streamlined, transparent and science-based import procedures.
OUTPUT 18	Limited institutional commitment and insufficient resource allocation hinder implementation of the phytosanitary strategy.	→ Strong leadership commitment and adequate financial, human and technical resources available.	3	3	9	Raise awareness among stakeholders. Mobilize required resources. Conduct monitoring and evaluation.
OUTPUT 19	Insufficient or unstable allocation of budget, personnel, and infrastructure may prevent the NPPO from maintaining operational readiness for post-certification compliance and PRA implementation.	→ Adequate and sustained financial support, skilled personnel and necessary infrastructure available.	2	2	4	Establish long-term resource mobilization and capacity-building mechanisms.

Implementation arrangement for the strategy

ROLES AND RESPONSIBILITIES OF STAKEHOLDERS IN THE PHYTOSANITARY STRATEGY IMPLEMENTATION

The limited capacity of the NPPO in its current form has been a primary factor contributing to the uncontrolled introduction, establishment and invasion of quarantine pests affecting the country's major crops. **The invasion of the fall armyworm (FAW)** illustrates the importance of proper responsibility sharing and accountability in phytosanitary efforts. Critical gaps were found in the national phytosanitary service, which allowed the pest to spread rapidly across the country in less than a year. Limited technical knowledge and expertise on FAW, combined with inadequate regional and continental collaboration in phytosanitary response mechanisms, facilitated the rapid introduction and dissemination of the pest in Africa.

In Ethiopia, the problem was recognized only after the insect had already become established in the southwestern parts of the country, causing significant damage, particularly to maize and sorghum crops. In response to its rapid spread, considerable resources were allocated to raise awareness and take control measures, often with insufficient attention to health and environmental safety.

The introduction and spread of FAW in Africa, including Ethiopia, can therefore be linked to weaknesses in the phytosanitary service. These weaknesses include insufficient surveillance systems, limited pest diagnostic capacity, inadequate technical expertise at all levels and insufficient coordination between farmers, plant protection experts, plant health clinics, and authorities working at the federal, regional, zonal, woreda and kebele levels for the exchange of pest information.

Overall, if the phytosanitary system had defined the capabilities, responsibilities and accountabilities of all actors in agriculture and other sectors, and if all responsible bodies were well supported to perform their respective tasks, the introduction of such a devastating pest could have been prevented or mitigated.

The entry and spread of the pest might have been avoided if the institutions listed below fully exercised their responsibilities. Therefore, it is essential to clearly define the roles and accountability of all actors within the national phytosanitary system, as outlined below.

Stakeholders' responsibilities

Responsibilities of the NPPO

1. Develop or update phytosanitary-related laws, regulations and directives; communicate them to all stakeholders; proactively supervise their enforcement; collect feedback and improve the legal framework.
2. Coordinate the provision of phytosanitary services at the national level for quarantine pests and regulated non-quarantine pests.
3. Coordinate pest surveillance, survey and monitoring on quarantine pests at the national level, and run a pest information exchange network across the country.
4. Utilize national diagnostic laboratories that are instrumental for effective pest surveillance and survey activities.
5. Organize regular training programmes, implement capacity-building initiatives and facilitate experience-sharing events for phytosanitary professionals.
6. Deliver phytosanitary services at both the national and regional posts of entry, including domestic quarantine services.
7. Produce pest information communication materials and distribute them nationwide.
8. Establish a national pest database and administer the associated information system.
9. Provide technical and material support to regional phytosanitary service providers.
10. Represent the country in national, regional and international forums related to plant protection and phytosanitary matters.
11. Work with partners to mobilize funding to carry out phytosanitary-related programmes.

Regional plant health regulatory bodies

1. Develop or update phytosanitary-related laws, regulations and directives; communicate them to all stakeholders; proactively supervise their enforcement; collect feedback and improve the legal framework.
2. Coordinate the provision of phytosanitary services at the regional level for quarantine pests and regulated non-quarantine pests.
3. Coordinate pest surveillance, surveys and monitoring of quarantine pests at the regional level and help run a pest information exchange network across the country.
4. Operate and manage the diagnostic laboratories within the region, which are instrumental in conducting successful surveillance and survey activities.
5. Organize regular training programmes, implement capacity-building initiatives and facilitate experience-sharing events with phytosanitary experts within the region.
6. Deliver phytosanitary services within the region, including domestic quarantine activities, and at points of entry where applicable.
7. Produce region-specific pest information communication materials and distribute across the region.
8. Provide pest-related information regularly to support the updating of the national pest database.
9. Provide technical and material support to phytosanitary service providers within the region.
10. Represent the region in national forums related to plant protection and phytosanitary matters.

11. Ensure the allocation of adequate personnel within the region to deliver phytosanitary services.

Plant health regulatory bodies at points of entry

1. Enforce national pest-related laws, regulations and guidelines; provide feedback regularly.
2. Coordinate the provision of phytosanitary services at points of entry for quarantine pests and regulated non-quarantine pests.
3. Conduct pest surveillance, surveys, and monitoring of points of entry for quarantine and non-quarantine pests; contribute to the pest information exchange network across the country.
4. Collaborate with diagnostic laboratories located near points of entry that support effective surveillance and survey activities.
5. Organize regular training sessions, implement capacity-building initiatives, and facilitate experience-sharing events with phytosanitary experts at regional and national level.
6. Deliver phytosanitary services at points of entry.
7. Distribute pest information and communication materials.
8. Provide pest-related information regularly to support updates to the national pest database through the respective regional authorities.
9. Provide technical and material support to phytosanitary service users.
10. Represent the point of entry in all forums being organized on plant protection-related issues.
11. Ensure that adequate staff are assigned at each point of entry to deliver phytosanitary services.

Responsibilities of the Ministry of Agriculture in phytosanitary service provision

1. Establishing systems for plant health services.
2. Develop or improve plant protection-related laws, regulations, directives and standard operating procedures.
3. Communicate legal provisions to all relevant stakeholders, supervise their enforcement, collect feedback and support improvement of legal provisions.
4. Oversee the development and implementation of the national phytosanitary strategy.
5. Oversee the implementation of phytosanitary services targeting regulated pests.
6. Support EAA in coordinating with regional bureaus of agriculture, plant health clinics, regional regulatory bodies and other key stakeholders in providing emergency response plans to eradicate newly introduced regulated pests.
7. Oversee the supply and quality control of plant protection inputs.

Responsibilities of the Plant Chief Executive Office of the Ministry of Agriculture

1. Coordinate pest surveillance, survey and monitoring on regular and migratory pests at the national level.
2. Operate a national information exchange network for regular and migratory pests.
3. Manage national diagnostic laboratories that support the identification and diagnosis of economically important pests.
4. Oversee quality control of bulk-imported pesticides through specialized laboratories.
5. Organize regular training programmes, implement capacity-building initiatives and facilitate experience-sharing events for plant protection experts.

6. Produce and distribute information and communication materials on regular and migratory pests across the country.
7. Provide technical and material support for regional pest management service providers.
8. Participate proactively in emergency responses for the control of newly introduced pests.
9. Represent the country in forums related to plant protection issues.
10. Work with partners to mobilize funding to carry out PMSS related programmes.

National agricultural research system

1. In consultation with the NPPO, develop research topics on current phytosanitary concerns.
2. In consultation with the NPPO, conduct problem-solving scientific research on key phytosanitary issues.
3. Adapt, generate and transfer technical information, knowledge and skills relevant to phytosanitary management.
4. Take part in the provision of technical support for the identification of new pests, and for pest surveillance and survey activities.
5. Proactively participate in the national crop pest information exchange network.
6. Contribute to the strengthening of the national pest database.
7. Participate in forums organized on phytosanitary-related issues.

Higher learning institutions

1. Conduct national needs assessments to determine demand for phytosanitary experts.
2. Develop and update academic curricula accordingly.
3. Proactively work to attract students to pursue studies in phytosanitary disciplines.
4. Train and graduate competent plant protection professionals.
5. In consultation with the NPPO, identify and develop research topics addressing current phytosanitary concerns.
6. In collaboration with the NPPO, conduct problem-solving scientific research on key phytosanitary issues.
7. Adapt, generate and transfer technical information, knowledge and skills relevant to phytosanitary management.
8. Provide technical support in new pest identification, surveillance, and survey activities.
9. Participate actively in the national crop pest information exchange network.
10. Contribute to the strengthening of the national pest database.
11. Participate in national forums organized on phytosanitary-related issues.

Other enabling considerations for the success of the strategy

International cooperation

- Collaborate with other countries and international organizations to share information, develop standards, and address transboundary pests and diseases.
- Ensure alignment with the IPPC and its International Standards for Phytosanitary Measures (ISPMs) to guide the development and adaptation of phytosanitary procedures across core activities.
- Utilize training and educational materials developed under the IPPC framework to support national capacity development and the training of personnel.

Communication and awareness

- Develop and implement communication strategies to disseminate phytosanitary information to stakeholders, including the public, businesses and agricultural producers.
- Raise awareness about the importance of plant health and the risks associated with pests and plant diseases.



Mung crop bean in Kucha southern Ethiopia with promising export potential

The existing and revised organizational structures of the NPPO

The Ethiopian Agricultural Authority (EAA) is headed by a Director General, supported by two Deputy Director Generals and a Coordinator for the EAA branch offices. Under the DDG responsible for Plant Regulatory Services (NPPO), four senior offices oversee pesticide and fertilizer regulation, plant inputs and products, plant variety and seed regulation and plant quarantine and regulation.

The Plant Quarantine and Regulation Office includes three sections responsible for inspection and certification, PRA and surveillance, and food safety regulation.

In the current organizational structure (Figures 8 and 9), the NPPO is not directly linked to the border posts, which fall under the direct authority of the EAA Branch Offices Coordinator. This arrangement limits the timely exchange of information and may delay responses requiring urgent action by the NPPO.

FIGURE 7. Location of the National Plant Protection Organization within the Ethiopian Agricultural Authority indicated in green square.

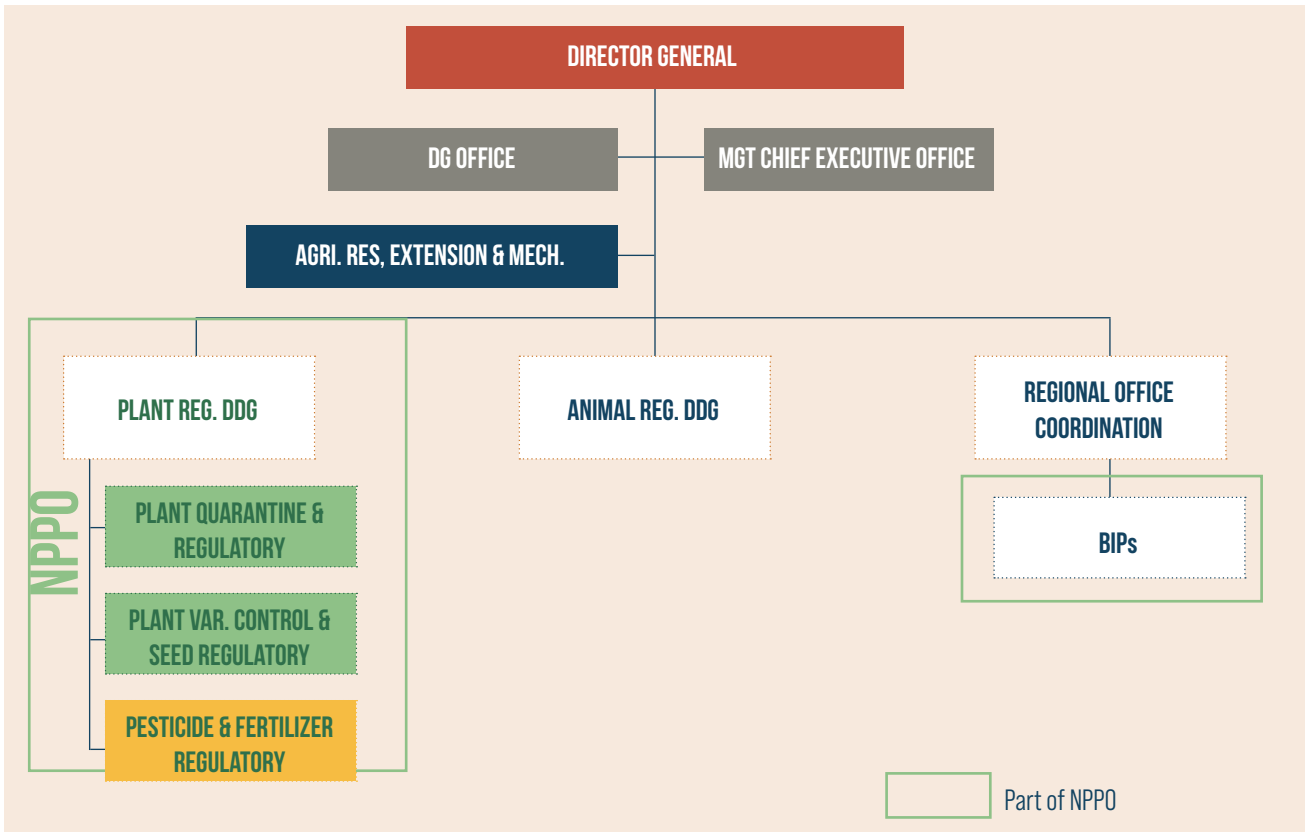
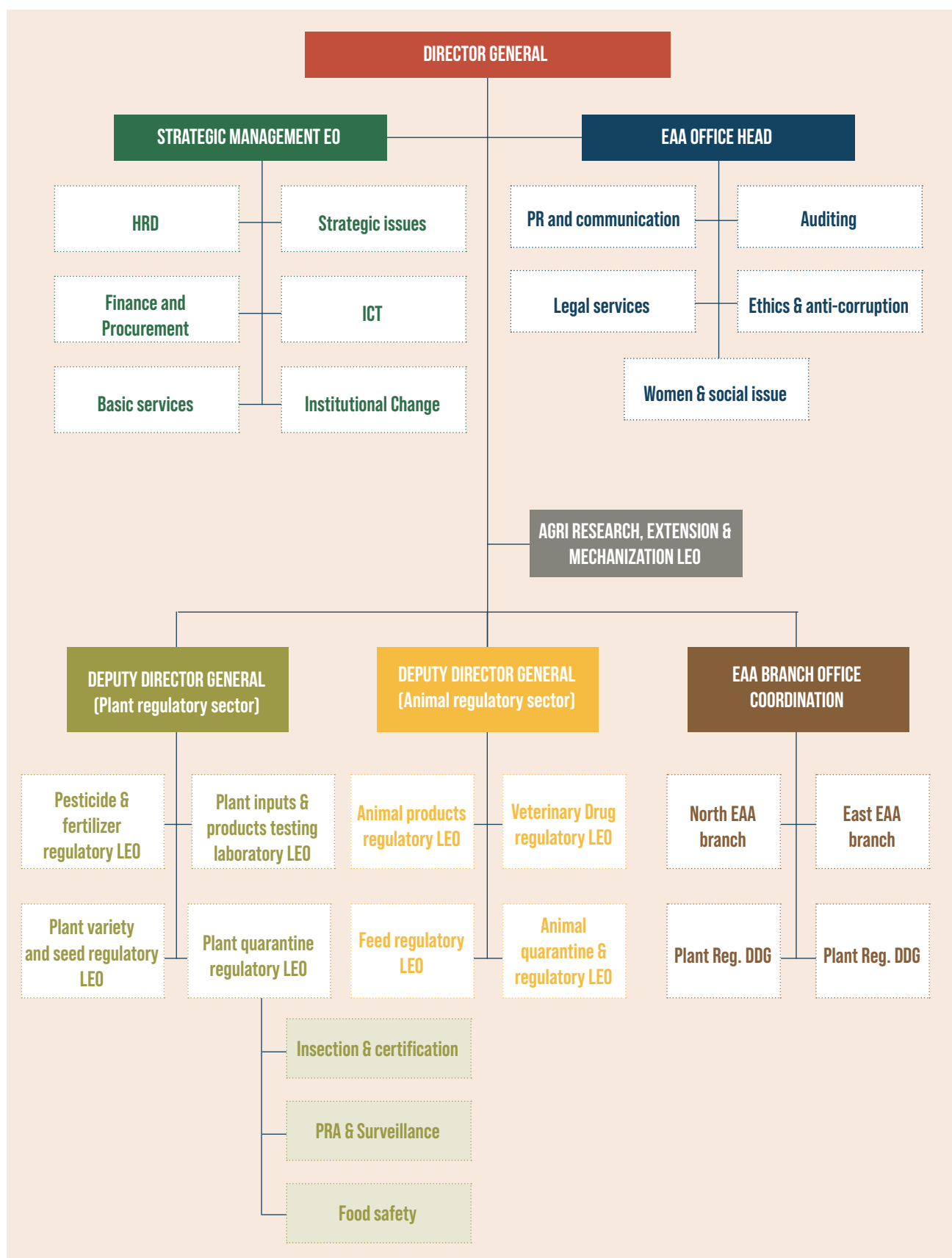


FIGURE 8.
Organizational structure of the Ethiopian Agricultural Authority.



A significant challenge identified during the Phytosanitary Capacity Evaluation (PCE), and considered a critical bottleneck, is the organizational structure of the National Plant Protection Organization (NPPO), particularly its capacity to support phytosanitary service delivery. This challenge is associated with misalignment within the NPPO and the absence of key technical units, such as those responsible for Pest Free Areas (PFAs) and surveillance, which are essential components recommended under the framework of the International Plant Protection Convention (IPPC).

Furthermore, the placement of border inspection posts under the coordination unit of the EAA branch offices has greatly hindered the NPPO's ability to oversee and manage import and export activities. Border inspection functions need ongoing, prompt decisions and technical oversight, particularly when handling shipments that might pose plant health risks.

There is also an urgent need to strengthen the NPPO's capacity to address the growing number of non-compliance cases arising during import and export processes. To comply with IPPC standards, inspectors stationed at border posts must have a direct communication and reporting line to the NPPO's official contact point, the Deputy Director General for Plant Regulatory Services.

Therefore, to ensure the NPPO can meet its international commitments under the IPPC and enhance the effectiveness of the national phytosanitary system, a revision and restructuring of the NPPO's organizational setup is necessary. This will improve coordination, enable faster responses to plant health threats, facilitate safe trade and strengthen the protection of agriculture and biodiversity. The revised organizational structure proposed ideal for implementing this strategy is described in Figure 9.

Inclusion of pest free area and surveillance functions in the Ethiopian NPPO structure

To strengthen Ethiopia's compliance with its obligations under the International Plant Protection Convention (IPPC) and enhance the country's phytosanitary capacity, it is vital to formally incorporate the establishment and maintenance of Pest Free Areas (PFAs) and a comprehensive surveillance programme into the organizational framework of the National Plant Protection Organization (NPPO).

PFAs represent a fundamental principle of international plant health, as outlined in ISPM 4 (Requirements for the establishment of pest free areas) and ISPM 10 (Requirements for the establishment of pest free places of production and pest free production sites). These mechanisms are essential for enabling safe trade and managing pest risks.

To operationalize these functions within the Ethiopian NPPO, a dedicated technical unit should be created with responsibilities including identifying and delineating potential PFAs based on pest distribution data; developing and implementing protocols for pest exclusion, suppression and eradication; conducting regular monitoring and inspections to preserve PFA status; preparing technical documentation and verification reports for international recognition; and coordinating with exporting companies and importing NPPOs to ensure recognition of PFA status.

A surveillance program is essential for detecting pests, determining their status and establishing early warning systems, as outlined in ISPM 6 (Surveillance). This function is vital not only for early detection of new pests but also for maintaining PFAs and supporting pest risk analysis (PRA) activities.

To ensure effectiveness and sustainability, the Ethiopian NPPO should establish a Surveillance and Pest Diagnostics Unit responsible for conducting general surveillance to identify pest presence or absence at both national and sub-national levels; implementing targeted surveys for quarantine pests; establishing a pest reporting system in accordance with IPPC requirements; managing pest data within a national phytosanitary database aligned with the IPPC's International Phytosanitary Portal (IPP); and collaborating with research institutions, regional plant protection units and laboratories for field and laboratory diagnostics.

For effective institutional integration and coordination, both the PFA Unit and the Surveillance Unit should be structurally embedded within the NPPO with clear lines of authority and reporting to the NPPO's central leadership. Adequate budget allocations should be provided for technical operations, capacity building and equipment. These units should operate under Standard Operating Procedures (SOPs) aligned with IPPC guidelines and establish coordination mechanisms with border inspection units, pest risk analysis teams and regulatory enforcement officers.

Essential functions of the missing units:

Surveillance Programme Unit (ISPM 6)

- Designs and implements national pest surveillance strategies.
- Coordinates general and specific pest surveys.
- Collects and manages pest occurrence data.
- Reports pest status to the IPPC and relevant national stakeholders.
- Collaborates with diagnostic laboratories and regional regulatory offices.

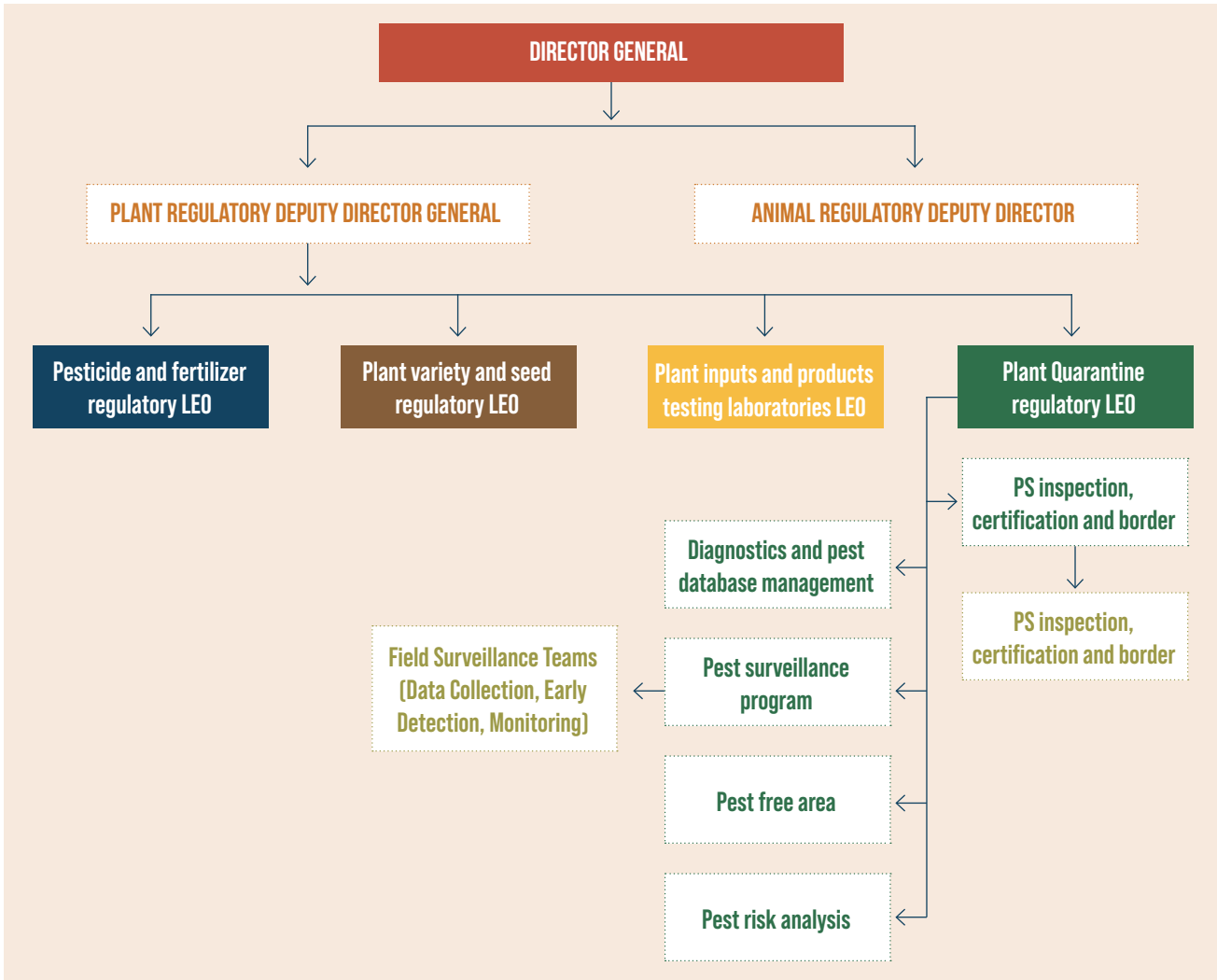
Pest Free Area (PFA) Unit (ISPM 4 & ISPM 10)

- Identifies and establishes PFAs based on scientific pest distribution data.
- Coordinates pest control, eradication and monitoring activities.
- Prepares documentation for PFA verification, recognition and audits.
- Liaises with exporters and importing NPPOs to facilitate trade.

Diagnostics & Pest Database Management Unit (supporting both units)

- Supports accurate pest identification.
- Maintains the national pest database in accordance with IPPC requirements.
- Provides laboratory support to both Surveillance and PFA units.

FIGURE 9.
Proposed organizational structure of the NPPO, including the new core units.



Core components of a robust national phytosanitary system: the cases of Australia, India and South Africa.

The key elements of a national phytosanitary system can be easily observed from the way countries regulate the trade of plants, plant products and regulated articles. Across many countries, these systems share the same objective: to protect plant health by implementing measures that prevent the introduction and spread of plant pests.

Such measures are designed to enable safe trade in plants and plant products, including access to international markets, while safeguarding plant health. Ethiopia should aim to establish similar core components within its phytosanitary system, even though the specific context in the country may differ from that of other countries.

The following sections outline key components of national phytosanitary systems based on practices from Australia, India, Kenya and South Africa.

I. AUSTRALIA



The national phytosanitary system aims to prevent the introduction and spread of harmful plant pests while ensuring access to international markets. The system ensures strong capacity to protect plant health and facilitate safe trade in plants and plant products. It is supported by **international agreements, national legislation** and strong **government-industry partnerships**.

1. International agreements

Australia is a contracting party to the IPPC and a member of the WTO. As such, it adheres to international standards and provisions of the WTO SPS Agreement, ensuring that phytosanitary **measures are science-based** and not used as unjustified trade barriers.

1.1 National legislation and regulations: The Australian phytosanitary system is underpinned by national legislation and regulations that enable the implementation of international standards while responding to specific national needs at both federal and state levels.

1.2 National Plant Protection Organization: The NPPO represents the country in international forums and ensures that the leadership has a clear view of global phytosanitary developments. It also coordinates national efforts to manage phytosanitary processes and activities in the country.

1.3 Plant Health Australia (PHA): PHA is a key partner that coordinates collaboration between government and industry to strengthen the national plant biosecurity system. It supports the management of pest outbreaks and other pest-related events and improves market access for plants and plant products.

2. Surveillance and monitoring

Australia maintains a robust plant health surveillance system that monitors pest populations, ensures the early detection and rapid response to potential phytosanitary threats.

3. Import and export controls

The Australian system manages the import and export of plants and plant products through risk-based measures. These measures include phytosanitary certification and other regulatory requirements designed to ensure compliance with national import conditions.

4. Emergency Response

Australia has a framework for a national response to incursions of emergency plant pests. This is provided for in a “Deed” called the Emergency Plant Pest Response Deed.

5. Transparency and Communication

Australia actively **participates in the WTO’s SPS Committee**, where it provides updates on its activities and engages with trading partners on its regulations or the country’s concerns about regulations of other trading partners. It also maintains **contact points** to facilitate **communication** with stakeholders about SPS measures.

6. Roles and responsibilities

6.1 Australian Government: The Australian Government plays a leading role in the development of policy, international engagement and national coordination of SPS matters.

6.2. State and territory governments: They implement national policies and regulations, conduct surveillance and control activities, and manage emergency responses within their jurisdictions.

6.4 Industry: Industry plays a vital role in implementing biosecurity practices, participating in pest surveillance and monitoring programmes, and managing phytosanitary events.

6.5. Plant Health Australia (PHA): PHA facilitates collaboration and coordination between government and industry and manages national response arrangements for emergency plant pest situations.

INDIA



India's phytosanitary system aims to safeguard plant health and facilitate safe trade in plants and plant products. The system comprises regulations, standards and procedures for both the import and export of plants and plant materials, aligning with **international standards** set by the IPPC. Its primary focus is to prevent the introduction and spread of harmful plant pests while supporting agricultural exports.

Key components of the system

Import regulations: The regulation of imports follows modern law, with rules for importing plants and plant products based on documented phytosanitary risks.

Phytosanitary export certification: Phytosanitary certificates (PCs) issued by authorized officers attest that plant material meets the importing country's phytosanitary requirements. PCs ensure that the importing country is informed of the health status of the exported material. Therefore, the phytosanitary certification process is primarily influenced by the requirements of importing countries.

Pest Risk Analysis (PRA): PRA is the basis for import regulations and procedures applied to imports, which are designed to

ensure that imported material is free from India's regulated (quarantine) pests.

Inspection and treatment: Compliance with phytosanitary requirements for the import and export of plants and plant products is verified through visual inspections of samples collected using appropriate sampling protocols. Outcomes of inspections may necessitate phytosanitary treatments to eliminate pests before release or certification. The NPPO has access to phytosanitary treatment facilities for ensuring effective pest control during import and export certification or authorization. These services may be offered through third-party organizations duly authorized by the NPPO.

Capacity building: Training programmes and staff development to enhance expertise in official controls and the application of phytosanitary measures are integrated into the core activities of the phytosanitary system.

Standards and guidelines: Phytosanitary measures are adapted from ISPMs to suit national implementation needs. The adapted standards are operationalized through SOPs and work instructions.



Kenya's national phytosanitary system aims to prevent the introduction and spread of harmful organisms while facilitating safe trade in plants and plant products, ultimately contributing to food security and economic development. KEPHIS manages the system under a framework designed to protect plants and plant products from pests, both for domestic and international trade. The key components of the system are described below:

1. Policy and legal framework

- i. National phytosanitary policy:** Outlines the interventions to create an enabling environment for the safe trade of plants and plant products.
- ii. Plant Protection Act:** Provides the legal basis for phytosanitary measures, including the regulation of plant movements and disease control.
- iii. Import and export regulations:** Specific regulations govern the import and export of plants and plant products, ensuring compliance with international standards and minimizing risks.

2. Key Institutions

- i. KEPHIS:** The primary body responsible for implementing the phytosanitary system, including import and export certification, pest surveillance and laboratory diagnostics.
- ii. Ministry of Agriculture:** Provides overall policy direction and oversight.
- iii. Regional offices:** KEPHIS has regional offices that handle farm export certification and post-entry quarantine.

3. Core functions

- i. Import control:** Regulates the entry of plants and plant products through import permits, inspections and other measures aimed at preventing the introduction of pests and diseases.
- ii. Export certification:** Issues phytosanitary certificates for exports, ensuring that Kenyan products meet the requirements of importing countries.
- iii. Pest surveillance and diagnosis:** Monitors pests and diseases, conducts risk assessments, and provides diagnostic services for plant health issues.
- iv. Emergency Response:** Implements procedures to respond to pest and disease outbreaks, including surveillance, eradication and control measures.

4. Key Activities

- i. Stakeholder engagement:** Collaboration with various stakeholders, including farmers, researchers and international organizations, to ensure the effectiveness of the phytosanitary system.
- ii. Information management:** Use of systems like NAPMIS (National Agricultural Projects Management Information System) and a web-based database to manage information related to agricultural projects and pests.
- iii. Phytosanitary capacity development:** Enhance stakeholder capacity through training, infrastructure development and laboratory operations.
- iv. International standards:** Kenya's phytosanitary system is aligned with international standards set by the IPPC. These standards are domesticated through SOPs and ISO QMS, to which KEPHIS is accredited. Domestication ensures that practices are consistent with global best practices.

SOUTH AFRICA



The phytosanitary system of South Africa aims to protect plant health and facilitate safe trade in plants and plant products by preventing the introduction, establishment and spread of regulated pests. The system operates under the Plant Health (Phytosanitary) Act, 2024, and the Agricultural Pests Act, 1983.

The system is guided by the National Phytosanitary Policy, which outlines measures to reduce pest risks and build capacity for sustainable plant health management. The policy acknowledges the potential impact of pests, particularly on food security, trade, rural livelihoods and the environment. The system aligns with ISPMs and fulfils obligations under the WTO SPS Agreement and the IPPC.

In South Africa, the NPPO has clear roles and responsibilities for phytosanitary measures, including the following:

1. Phytosanitary certification and trade

- i.** Ensuring that exported plants and plant products meet the phytosanitary import requirements of trading partners.
- ii.** Issuing phytosanitary certificates for exports, verifying that they are free from quarantine pests.
- iii.** Conducting inspections and sampling of plants and plant products.
- iv.** Preventing the export of consignments that do not meet phytosanitary requirements.

2. Pest management

- i.** Detecting and identifying regulated pests.
- ii.** Implementing surveillance programmes to monitor pest outbreaks.
- iii.** Developing and implementing contingency plans and control procedures for pest outbreaks.

- iv.** Conducting pest risk analyses to assess potential threats associated with imported commodities.
- v.** Managing and maintaining pest-free areas and areas of low pest prevalence.
- vi.** Regulatory and policy functions
- vii.** Developing and implementing phytosanitary regulations and policies.
- viii.** Participating in the WTO SPS notification system and maintaining a plant protection contact point and website.
- ix.** Notifying the International Plant Protection Convention (IPPC) Secretariat of pest outbreaks and participating in international forums.

4. Capacity building and information sharing

- i.** Providing training and developing the capacity of plant health personnel.
- ii.** Distributing information within the country regarding regulated pests and their prevention and control.
- iii.** Conducting research in the field of plant protection.

3. Other Responsibilities

- i.** Ensuring the phytosanitary security of consignments after certification.
- ii.** Cooperating with other organizations and countries on matters related to plant health.
- iii.** Protecting endangered areas.
- iv.** Establishing and maintaining a record-keeping system.

TABLE 7.

Monitoring and evaluation in the implementation of phytosanitary services.

EVALUATION AREA	MONITORING				
	MONITORING QUESTION	INDICATORS	DATA SOURCES/METHODS	RESPONSIBILITIES	TIMEFRAME
Policy needs addressed	Are all the required laws, regulations and guidelines available?	Legal tools developed and enforcement initiated.	EAA and regional regulatory bodies	EAA and MoA	One year
	Are laws and regulations fully communicated and implemented?	Staff capacity to prevent, intercept and eradicate new pests.	EAA, MoA, and regional authorities	EAA/NPPO, MoA, regions, zones, woredas, kebeles	Two years
NPPO human resource capacity strengthened	Are the required human resource available?	NPPO core teams fully staffed at HQ, regional regulatory bodies, and phytosanitary posts.	EAA and regional authorities	EAA/NPPO	One year
	Are personnel capable of delivering phytosanitary services?	Presence of well-trained, skilful, and responsive staff.	EAA and MoA	EAA/NPPO, MoA, BoA, NARS, HLI and FAO	One year
Pest diagnostics laboratories established	Are the key laboratories required for phytosanitary services present and operational?	Appropriate buildings are erected to house the different laboratories.	EAA and MoA	EAA/NPPO and MoA	Five years
	Are the key laboratories required for phytosanitary services present, fully equipped and operational?	Laboratories well equipped; required facilities and consumables available.	EAA and MoA	EAA/NPPO, MoA, BoA, NARS, HLI and FAO	Three years

EVALUATION AREA	MONITORING				
	MONITORING QUESTION	INDICATORS	DATA SOURCES/METHODS	RESPONSIBILITIES	TIMEFRAME
Phytosanitary service provision aligned with needs	Are the laws and regulations fully communicated and implemented?	Increased capacity of the staff to prevent, intercept and eradicate new pests.	EAA, MoA and regional authorities	EAA/NPPO, MoA, regions, zones, woredas, kebeles	Two years
	Are entry posts equipped and operational?	Laboratories equipped; facilities and consumable available.	EAA and MoA	EAA and MoA, and regions	Three years
	Are the posts adequately staffed?	Reduction in phytosanitary threats and risks.	EAA and MoA	EAA and MoA, and regions	Two years
	Are entry posts networked with the NPPO and regional authorities?	Staff is fully aware of the country's current phytosanitary threats and risks.	EAA and MoA	EAA and MoA	Three years
	Are farmers receiving information on new pest alerts and guidance on how to manage them?	Transport facilities established; surveillance and monitoring data collected and shared.	EAA, MoA and regional authorities	EAA and MoA, and regions	Every year
	Are plant protection experts and farmers regularly receiving training on phytosanitary service?	Training programmes organised and delivered.	EAA, MoA and regional authorities	EAA, MoA, regions, zones, woredas, kebeles, NARS, HLI	Every year
	Are new pest control operations technically and financially supported?	New pest outbreaks effectively curbed.	EAA, MoA and regional authorities	EAA, MoA, regions, zones, woredas, kebeles, NARS, HLI	Every year
	Are established invasive pests effectively managed?	Reduced risks of invasive pest spread	EAA, MoA and regional authorities	EAA, MoA, regions, zones, woredas, kebeles, NARS, HLI	Every year
ICT usage in the phytosanitary system improved	Are new pest problems communicated fast and regularly?	Timely response to pest outbreaks.	EAA, MoA and regional authorities	EAA, MoA, regions, zones, woredas, kebeles, NARS, HLI	Two years
Coordination of phytosanitary service providers strengthened	Are phytosanitary service providers coordinated across regions and at the federal level?	Improved national coordination and knowledge sharing on pest threats and management practices.	EAA, MoA, regions, zones, woredas, kebeles, NARS, HLI	EAA, MoA, regions, zones, woredas, kebeles, NARS, HLI	One year

TABLE 8.

List of participants in the series of consultation workshops for the development of the phytosanitary strategy.

NAME	GENDER	DESIGNATION	ORGANIZATION
Ambassador Deriba Kuma	M	DG	EAA
Abdo Wayoma	M	Programme assistant	Ethio-Netherlands seed partnership
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Berhanu Solomon	M	Head, Regional Regulatory Authority	South Regional Regulatory Authority
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Fikre Markos	M	Phytosanitary advisor	EAA
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Gemada Dinagde	M	EAA Branch offices coordinator	EAA
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Getu Gemechu	M	Head, Bureau of Agriculture	Oromia Regional Bureau of Agriculture
Girma Abdissa	M	Policy analyst	Ministry of Trade and Regional Integration
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Kuma Kebede	M	PQ inspector	EAA
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NAME	GENDER	DESIGNATION	ORGANIZATION
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Mekdes Nega	F	Executive officer, Plant Quarantine Lead	EAA
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Merawi Kibru	M	Head, IT	EAA
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Mokhammod Aman	M	Competency evaluation expert	EAA
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Ms. Nydiane Razafindrahaingo	F	Economic affairs officer	WTO, Standard and Trade Development Facility
Mulatu Abate Belay	M	Senior Plant Health Officer	EAA
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NAME	GENDER	DESIGNATION	ORGANIZATION
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Tesfaye Hailu	M	Plant Pathologist President	Plant Protection Society of Ethiopia
Tiko Tilante	M	Head, Regional Regulatory Authority	Southwest Regional Regulatory Authority
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Wondayehu Getu	M	Expert	Coffee export Association
Workicho Jateno	M	AFAOR	FAO ET
Wubante Girma	M	Plant Protection Directorate	MoA
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PHYTOSANITARY CAPACITY DEVELOPMENT STRATEGY FOR ETHIOPIA

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