

ASSESSMENT OF THE PHYTOSANITARY SYSTEM IN EGYPT

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ABSTRACT

This study aims at assessing the degree of compliance of the Egyptian Phytosanitary (Plant health) organization to the international standards in terms the institutional context; legislative framework, structure and documentation procedures. The assessment contributes to capturing the current situation; identify the gaps in the phytosanitary control system and provide recommendation to overcome these gaps. Identification of gaps can assist in improving the phytosanitary system through improving the relevant organizational behavior. Due to the importance of complying to international standards especially in the agriculture trade arena this study is essential in understanding the key department requiring improvements in the plant health organization. The enhanced compliance of the plant health organization to international standards increases the chances of accessing new markets and maintaining current trade flow and thus increases the national income. Countries deficient in international standards processes and outcomes may not be able to fully trade with world market. Also, deficiencies in application of adequate procedures for imports may cause introduction of exotic pests that would cause destruction to agriculture flora. The Phytosanitary Capacity Evaluation (PCE) model was adopted as the reference measuring the level of compliance with international standards in the Egyptian Phytosanitary System.

The study showed that there is clear gap in the legislative and institutional framework of the plant health organization. The compliance according to the responses was 38%, as for the structure reflected in the facilities the compliance was only 25%. The documented procedure in contrary was 72% in compliance with the international standards.

Keywords: Institutional Assessment - Phytosaintary Organization - International Plant Protection Convention "IPPC" – Plant Quarantine – Phytosaintary Capacity Evaluation tool "PCE" - Egypt

INTRODUCTION

One of the main global goals is eliminating hunger. Countries are obliged to supply their communities with healthy and nutritious food which is basic to secure food for their nations. Food security refers to the availability of safe food and one's access to it. A household is considered food-secured when its occupants do not live in hunger or fear of starvation (UNDP, 2000). The World Health Organization defines three facets of food security: food availability, food access, and food use. The latest FAO definition added safety of food to the food security dimensions. Food availability is having available sufficient quantities of food on a consistent basis. Food access is having sufficient resources, both economic and physical, to obtain appropriate foods for a nutritious diet. Food use is the appropriate use based on knowledge of basic nutrition and care, as well as adequate water and

sanitation. The FAO adds a fourth facet: the stability of the first three dimensions of food security over time (FAO Statistical Yearbook, 2012)

Food and food products can be supplied either through national production or exports. In order to maintain the agriculture productivity, countries should ensure that they are avoiding any risks while trading and to prevent the introduction of exotic pests when allowing the accesses of agriculture products to their markets in order to maintain equilibrium between the exports and production. The risks associated with the liberalized agriculture trade especially if assessment of risks is inadequate are high. The challenges facing developing countries with poor capacities are rigorous. Preventing risks requires that the responsible organization(s) would have the suitable capacities and infrastructure that facilitates the implementation of their role in protecting their countries territories against potential risks. Ensuring that the organizations adequately play its role, assessment should be performed periodically to outline the efficiency and effectiveness of the system and to outcome in ways to improve it.

Organization assessments are used for learning and improvement. This assists responsible authority to better understand what is working well and on what they should be focusing on their improvement efforts. Assessments also are effective at helping communicate priorities with various stakeholders and with monitoring progress over time. But the real value of an assessment is its ability to improve performance to improve outcomes and drive tangible organizational results.

Organization can be assessed in terms of the institutional and legislative context including the management functions and human resources qualification and efficiency, infrastructure and equipment including the facilities availability of needed resources such as software programs as well as communication network and documents and procedures which are vital for organizational performance. Governmental organizations can be assessed accordingly although their roles are distinctive as they are the formal gates through which countries communicate and create the rules and pattern of relation when dealing with other governments. Work of the governmental organization can be tranquil if globally accepted rules are followed and easily communicated when they are uniform. This study assesses the current organizations responsible for Phytosanitary application in terms of Agriculture product exports and imports. Sanitary and Phytosanitary SPS is a general term used to describe a variety of regulations on trade in agricultural products to protect human, animal, and plant health. The ultimate goal of the World Trade Organization's (WTO) SPS Agreement is to aid countries in building capacity to levels of sustainability. The WTO defines SPS as any measure that is applied to prevent or limit other damage to a country from the entry, establishment, or spread of pests and diseases (World Trade Organization, 2003). SPS measures are important mechanism to protect plants, animals, and humans from infestation and disease. Trade between countries can be obstructed when new products are introduced without sufficient regulatory procedures or when a country's SPS standards and practices do not meet the satisfaction of their trading partners. Numerous international organizations such as the World Trade Organization (WTO), the Food and Agriculture

Organization of the United Nations (FAO), and World Health Organization (WHO) recognize the need for equalized systems in food and agriculture safety to help preventing the spread of diseases. Such organizations also recognize that developing nations need technical aid for the improvement of SPS standards within their borders.

Egypt is a member of the WTO and is bound by the obligations of membership. For a developing country, the obligations of the WTO Sanitary and Phytosanitary (SPS) Agreement cause difficulties in terms of the infrastructure and expertise available to meet the requirements of the agreement.

Egypt has a complex array of standards that apply to agricultural products and food as well as to sanitary or phytosanitary measures; a range of quality standards is also in place. Inspection and testing arrangements are also complex. The study focuses on the capacities of the authority responsible of phytosanitary control measures.

The Objectives of the study:

The study aims to Capture the current situation of the phytosanitary system in Egypt; identify the level of compliance to the international standards; pinpoint the gaps in the phytosanitary control system and provide recommendation to overcome the gaps identified

The importance of the study:

The study is considered an innovative study in the field of sociology as the scope of the study was not previously tackled. Assessment of organization was not covered in most of the previous studies, where the previous studies analyzed the organization from economic perspective. The result of the study shall assist the agriculture policy makers in decision making; in initiating strategies and establishing legislation reform. The study may contribute to improving the trade of the agriculture products upon developing solutions to overcome the identified gaps.

The study form examined multiple aspects of Phytosanitary compliance in three categories. The categories were:

- Legislation and Institutional Issues
- Facilities and Equipment
- Documented Procedures

The paper is organized in four parts. The first part defines the scope of Sanitary and Phytosanitary (SPS) measures. Second part discusses the rationale for and implementation of the Phytosanitary Capacity Evaluation model. Third part presents an examination of Phytosanitary compliance under the Egyptian regulatory system. Final part recommends steps to improve Phytosanitary compliance.

**1. Conceptual Framework
Organizations**

An organization is a social entity that has a collective goal and is linked to an external environment. The word is derived from the Greek word organon, itself derived from the better-known word ergon which means "organ" – a compartment for a particular task.

Types of organizations differ and there are a variety of legal types of organization; including corporations, governments, non-governmental organizations, international organizations, cooperatives and universities. A hybrid organization is a body that operates in both the public sector and the private sector simultaneously, fulfilling public duties and developing commercial market activities.

Organizational theory is the sociological study of formal social organizations, such as businesses and bureaucracies, and their interrelationship with the environment in which they operate. It complements the studies of organizational behavior and human resource studies. These theories of organizations include Bureaucracy, Rationalization (Scientific Management), and the Division of Labor. Each theory provides distinct advantages and disadvantages when implemented.

Organization Assessment

Organization assessment can be defined as "... the process for obtaining systematic information about the performance of an organization and the factors that affect performance in order to diagnose areas of possible investments for change and/or to demonstrate competence." (CIDA, 2006) Assessing can act as a leading indicator for shifting performance and for identifying program strengths and/or weaknesses.

In addition to these internal roles for assessment, it is equally important outside the organization. Assessing can be used to create cross organizational comparisons or assist in benchmarking against required standards. These results can serve to motivate the organization, boost morale and help achieve targets.

Assessment helps to identify performance gaps and prioritize points of focus, and plays a role in helping to generate a future-state vision for the organization. By showing problems with process flow or bottlenecks in organizational performance, assessments provide a key tool in identifying opportunities for improvement.

Sanitary and Phytosanitary Measures

Sanitary and phytosanitary (SPS) is a general term used to describe a variety of regulations on trade in agricultural products to protect human, animal, and plant health.

- The World Trade Organization defines SPS as any measures that are applied to:

- Protect human or animal life from risks arising from additives, contaminants,
- toxins or disease-causing organisms in their food;
- Protect human life from plant- or animal-carried diseases;
- Protect animal or plant life from pests, diseases, or disease-causing organisms;
- Prevent or limit other damage to a country from the entry, establishment or spread of pests. (World Trade Organization, 1995)

The Sanitary and Phytosanitary "SPS" Agreement

Sanitary and Phytosanitary measures help to ensure the safe trade of agricultural goods. Governments are free to implement SPS measures as

they deem necessary to protect plants and animals against disease and infestation, but this freedom of implementation can lead to ambiguous standards. The General Agreement on Tariffs and Trade (GATT), which was updated in 1994 (GATT 1994) by members of the World Trade Organization, did not consider the role that Sanitary and Phytosanitary measures might play in trade negotiations. The WTO sought to close off this loophole by standardizing the international guidelines for SPS measures with the passage of the Agreement on the Application of Sanitary and Phytosanitary Measures (SPS Agreement), which took effect January 1, 1995. The SPS Agreement allows countries to choose their own SPS measures, but it also says regulations should:

- Be based on science.
- Be applied only to the extent necessary to protect human, animal or plant life or health.
- Not arbitrarily or unjustifiably discriminate between countries where identical or similar conditions prevail. (World Trade Organization 1995)

The goal of the SPS Agreement is to remove unjustifiable barriers to trade, not simply to achieve a minimum standard of SPS regulations. Many conditions including climate, indigenous pests, and types of goods require very different regulations in different markets.

Adherence to the SPS Agreement helps to ensure that justifiable and proper regulations are in place for the purpose of plant, animal and human safety. (World Trade Organization, 2003)

The SPS Agreement helps members communicate and disseminate new information, such as up-to-date risk assessments, to trading partners. Article III of the SPS Agreement states that members shall work "within their resources" with various organizations as they apply to ensure a timely and appropriate review of SPS measures for dissemination to the international Community. The agreement also requires that all member nations maintain "Enquiry Points," or persons assigned to relay information on SPS measures to and from the international community. (World Trade Organization, 1995).

Impact of SPS standards on developing countries agricultural exports

As noted in various studies (Henson, Saqib and Rajasenan, 2004; Henson and

Loader, 2001; Oyejide, et.al, 2000; Hooker, 1999; Unnevehr, 1999), the stringent SPS standards set by developed countries, coupled with the lack of technical and economic resources of developing countries to participate in standard setting process, has limited access to developed countries markets. Many developing countries have, as a result, experienced adverse repercussions on their economies as a result of failure to comply with the SPS standards. This resulted in a considerable loss of export revenue, employment and income (Noor, 2000; Ndaba, 2000; Waniala, 2000).

The broad indication of the impact of SPS standards on developing countries' exports is demonstrated by the border rejection rate of exports from developing countries. Of all developed countries, the import detention data is only made available by USA.

International Sanitary and Phytosanitary “SPS” Organizations

The SPS Committee within the WTO is the forum for discussion, information exchange and resolution of Sanitary and Phytosanitary issues. It is open to all WTO Members, who often send food safety and animal and plant health experts to the meetings. Observer status has been granted to the Office International des Epizooties (OIE), the joint FAO/WHO Codex Commission (Codex), the International Plant Protection Convention (IPPC), and other intergovernmental organizations active in SPS issues, including the World Health Organization (WHO), the Food and Agriculture Organization of the United Nations (FAO), the United Nations Conference on Trade and Development (UNCTAD), the International Trade Center (ITC) and the International Standards Organization (ISO).

The SPS Agreement language refers to three standard-setting international organizations, called the “three sisters,” whose activities are especially relevant to its objectives: the FAO/WHO Codex Commission, the Office International des Epizooties, and the international and regional organizations operating within the framework of the FAO International Plant Protection Convention (IPPC). These organizations are observers and important contributors to SPS Committee meetings, and advise WTO dispute settlement panels. (World Trade Organization) the focus of the study is the phytosanitary related topics thus an overview shall be given to the International Plant Protection Convention.

International Plant Protection Convention “IPPC”

The International Plant Protection Convention (IPPC), based in Rome, is a subsidiary body of the FAO. Its main objectives are to take specific actions to prevent the introduction and spread of plant pests, and to promote measures for pest control, including information exchange. It has developed region-specific lists of plant pests. The IPPC develops international plant import health standards, principally on quarantine pests, a “Glossary of Phytosanitary Terms,” basic principles governing phytosanitary laws and regulations, and harmonized plant quarantine procedures (Office International des Epizooties 2002).

The IPPC guidelines for pest risk assessment provide a scientific means for evaluating risks before governments determine the appropriate level of plant protection. National Plant Protection Organizations (NPPOs) and Regional Plant Protection Organizations (RPPOs) work together to help contracting parties meet their IPPC obligations. The Interim Commission on Phytosanitary Measures (ICPM) governs the implementation of the IPPC. It is presently composed of representatives from the NPPOs from both contracting parties to the IPPC and FAO members. The Commission provides a forum for the discussion of international plant protection issues and, assisted by several subsidiary bodies, delivers its annual program of work.

Phytosanitary control System in Egypt Regulatory framework

The key Egyptian legislation on Phytosanitary control are

1. **Agriculture Law No. 53 of 1966:** the principle horizontal legislation applicable to all agricultural issues.
2. **Ministerial Decree No. 3007 of 2001:** the principle legislation on plant quarantine and. It sets out the phytosanitary controls for imports and exports and includes lists of regulated pests.
3. **Ministerial Decree no. 1350 of 1997:** specifying the functions of administrative units under the MoALR.
4. **Prime Minister Resolution No. 1186 for 2003:** on inspection procedures and control of exports and imports
5. **Presidential Decision of the Ministers Council No. 2489 for 2007:** sets out the specific coordination mechanisms for notifications in the framework of the World Trade Organization (WTO) agreement on the application of SPS measures (SPS) and the WTO agreement on technical barriers to trade (TBT).
6. **Ministerial Decree No. (2892) for year 2004:** restructure the Plant Quarantine Committee in the MoALR.

There is no one single organization responsible for the application of the different phytosanitary activities in Egypt. Although number of national organizations and research institutes are involved for the application of Phytosanitary measures

Institutions involved in phytosanitary controls

The key institutions involved in phytosanitary control in Egypt are:

- a. Central Administration for Plant Quarantine (CAPQ)
- b. Central Administration for Pest Control (CAPC)
- c. Potato Brown Rot Project (PBRP)
- d. Plant Pathology Research Institute (PPaRI)
- e. Plant Protection Research Institute (PPrRI)
- f. Weed Research Laboratory (WRL)
- g. Date Palm Research Laboratory (DPRL)

Central Administration for plant Quarantine CAPQ in the MoALR is the official body responsible for plant quarantine and the regulatory system for phytosanitary control in Egypt

Central Administration for Plant Quarantine

Ministerial Decree no. 1350 of 1997 sets out CAPQ's main functions in relation to Plant Quarantine as follows:

1. Planning and development of regulations and resolutions governing the entry of plants, plant products and materials of Plant Quarantine
2. Identify places, entry points and permanent control of the sea, air and land border entry points. In addition to, exercising its powers to prepare projects for establishing Quarantine Stations in new land border entry points.
3. Provide the number of employees and identify their qualities and specialties to implement quarantine procedures
4. Provide the basic needs of buildings, facilities, devices, equipment, tools and all necessary possibilities to implement quarantine operations as soon as possible
5. Participate in international conferences and international organizations meetings working in the field of plant quarantine

6. Participate in bilateral international conventions related to the field of plant quarantine
7. Examine all agricultural imports entering the country through the sea, air and land border entry points
8. Examine all agriculture exports originating from Egypt to abroad as well as giving it the phytosanitary certificates that prove its inspection and conformity with the legislation of the importing countries.
9. Oversee preventive or treatment procedures regarding imported consignments found infected with pests where the law allows its treatment by specific methods and refuse consignments that are infected with pests by not allowing it to enter, re-exporting it or destroying them.
10. Oversee the implementation of plant quarantine procedures regarding agricultural consignments post entry.
11. Follow up and monitor the movement of agricultural commodities intended for export from their places of production
12. Monitor the movement of plants intended for planting in Egypt,
13. Monitoring zones under quarantine,
14. Manage the distribution of information on the identification of regulated pest and diseases in Egypt,
15. Coordination and cooperation with technical bodies as regards plant quarantine matters.

3. Methodology

Phytosanitary Capacity Evaluation tool

Determining the level of a foreign government's compliance with the Sanitary and Phytosanitary (SPS) Agreement is a difficult challenge, particularly in developing and least developed states where information is hard to find or non-existent. Data was collected from a variety of primary and secondary sources. The government documents were examined as well as reports such as trade agreements and economic data. Interviews were conducted with experts in relevant organization who can authoritatively declare SPS measures and the national SPS organizations. Their feedback constitutes a pivotal component of the research. The tool utilized was a form derived from the Phytosanitary Capacity Evaluation (PCE) model to measure the level of compliance with international standards. Adequately trained SPS professionals are in short supply, especially in poor economies. Inspectors and inspection facilities are often ill equipped, under-funded, and poorly staffed. Legislation can be too vague or unenforceable. Even when sufficient personnel are in place to execute SPS functions, they may not be properly trained.

Identifying specific problem areas for carrying out the standards of the SPS Agreement will help the Egyptian government agricultural officials' pinpoint appropriate technical improvements and determine appropriate assistance that can be requested according to the findings.

However, as information varies in quality and quantity in the public domain, and does not always yield the kind of answers one hopes to find. A diagnostic tool was employed that can be consistently applied from country to country. This tool will enable to identify specific problem areas and make recommendations for solving them.

Moreover, this tool snapshots the current situation that can be applied on frequent durations to measure if there is any progress as well capture the response to the recommendations developed after each application of this diagnostic tool.

The Rationale for the PCE Model

Canale, Chairman of the World Trade Organization's (WTO) stated that the Interim Commission on Phytosanitary Measures, developed the Phytosanitary Capacity Evaluation (PCE) model just prior to the Twenty-fifth Regular SPS Committee Meeting on November 7- 8, 2002. Canale's presentation was hosted by the Secretariat of the Committee at a seminar on technical assistance and capacity building related to the SPS Agreement on November 5, 2002. Canale recommended that an international diagnostic tool resembling one constructed by the government of New Zealand be used to determine SPS compliance and to assess technical assistance and capacity building needs (Canale, 2002).

The PCE model can be applied as self-examination to determine one's own compliance with international standards, or it can be used – as it is in this context – by a trading partner to determine another country's level of compliance with international standards. This model also helps to reduce conflict that can emerge in negotiations by specifically focusing on key components of SPS implementation. Form questions are precisely targeted to eliminate discrimination against a single country or product, which means that the model is flexible enough to be employed as an internal or external tool that reaches similar conclusions.

The establishment of an international standard for SPS allows a top-down application of technical assistance. National legislation and the recognition of authority must be improved before an effective national system can be achieved.

The modern approach does not mean that steps cannot be taken on local and national fronts simultaneously, but it does suggest that a nationally recognized and sustained organization forms the basis for improving the SPS system. The national SPS organization in each country will ultimately be responsible for communicating its policies to international bodies such as the WTO.

In addition, the national organizations will improve policies within their respective governments, with developing scientific research, and with educating the public and workforces. It is therefore imperative that the national organization must receive sufficient support from the national government and its trading partners. (Canale, 2002)

Implementing the PCE

The Phytosanitary Capacity Evaluation model can be divided into three main subjects areas:

1. Legislation and Institutional Issues
2. Facilities and Equipment
3. Documented Procedures

These subject areas are useful in that they highlight the "nature of the limiting factors" of a national SPS system. This is most helpful for determining

how best to apply technical assistance to help a country improve its own SPS system. Knowing the nature of the system deficiency will help determine whether the assistance should come in the form of:

- a) National coordination to help develop an institutionally sustainable organization, or,
- b) Technical cooperation directed at improving the education, training, workforce, and procedures of the organization, or,
- c) Investments in facilities and equipment necessary to perform various tasks associated with SPS implementation. (Canale, 2001)

Legislative and Institutional Issues

The form included eighteen questions pertaining to legislative and institutional issues. These questions are targeted to determine the extent of the national organization's statutory authority, and to gain specific knowledge about staffing and personnel capacities. Responses to these questions reveal whether a national organization is a legitimate, cohesive arm of the national government, whether it has sufficient authority to carry out its statutory duties, and whether the incentive structure for compliance is likely to yield positive action by those under the national organization's jurisdiction.

Facilities and Equipment

The sixteen facilities and equipment questions are intended to evaluate each country's access to the necessary equipment for carrying out SPS functions. The facilities and equipment questions focused specifically on the status of inspection facilities, particularly at points of entry, on laboratory facilities and equipment for various types of testing, and on computer system technology. Access to the items listed in the questionnaire is vital to meeting SPS requirements. Knowing what each country does and does not have access to allows for technical assistance to be applied more efficiently.

Documented Procedures

The third section of the questionnaire contained 24 questions about the documented procedures. These questions targeted the national organization's performance in executing the functions necessary to fulfill international SPS obligations. Responses to these questions reveal what duties have been and are being performed by the national organization in compliance with the SPS standards. The questions also target record-keeping and correspondence practices.

Degree of compliance

This was measured through calculating the frequencies of the responses to the form questions. The categories were used as separate variables and each set of questions represented the different cases of each variable. The form used closed ended "Yes or No" questions where positive responses reflected the compliance and the negative questions measured the current gaps.

RESULTS AND DISCUSSION

This section examines the extent of Phytosanitary system compliance to the international standards and provision in light of the

responds to the form. The responds are categorized to describe compliance in terms of legislation and institutional issues, facilities and equipment and documented procedures.

Degree of compliance

The frequencies was determined through each set of questions represented the different categories of each variable. The form used closed ended "Yes or No" questions where positive responses reflected the compliance and the negative questions measured the current gaps. The table below shows the degree of compliance of each variable to international standards.

Table (1) the degree of compliance to international standards

Component	Percentage of compliance	Percentage of non-compliance
Legislation & Institutional Issues	38.1	61.9
Facilities & Equipment	25	75
Documented Procedures	72.7	27.3

Source: the applied form

According to the previous table there is clear gap in the legislative and institutional framework of the plant health organization where the compliance according to the responses was 38%, as for the structure reflected in the facilities were in compliance with only 18%. The documented procedure in contrary was 72% in compliance with the international standards.

Every category reflects different issue which reveals the topics related to the phytosanitary system in Egypt. The following table describes the contribution of the different component of the category especially for the first and second categories were the degree of non-compliance was 61 and 85%. It was essential to further discuss the non-compliance in order to pin point the areas of gaps.

Table (2) the components of the assessment

Component	Description of component	Percentage of non-compliance	
Legislation & Institutional Issues	Legal framework	19	61.9
	Organizational Responsibilities	14.3	
	Human resources	28.6	
Facilities & Equipment	Availability of laboratories	12.5	75
	Availability of specialized equipment	43.8	
	Availability of Risk Analysis Software – Pest records	18.7	

Source: the applied form

Legislation and Institutional Issues

The legislation regulating the phytosanitary activities Egypt does not designate a single authority to undertake the responsibilities of phytosanitary control system. Specific responsibilities are assigned to the Egyptian plant quarantine but the rest of the responsibilities are delegated to a number of research institutes and organization. The legislation doesn't comply with the SPS agreement, as well it doesn't legally state the technical activities that any phytosanitary institution is obliged to implement within the scope of its role such as; Pest Risk Analysis "PRA" surveillance, establishing of pest free areas and control of internal movement of plants and plant products. The responses also indicated that lack of trained specialist on staff for pest diagnostics, technical laboratory support staff as well insufficient laboratory managers and insufficient number of employees for inspection services.

Although the legislation doesn't state the above mentioned technical commitments but the central administration of plant quarantine has a phytosaintary team but they are not legally stated in the legislation neither in the institutional structure. The central administration organize trainings to the staff especially inspectors at borders and ports but not systematically. Pest risk analysis is conducted on official basis but not legal. On institutional level there are no statements of vision, missions or strategic planning. The work of the plant quarantine is not based on annual work plan. Moreover, the plant quarantine doesn't conduct needs assessment in terms of human resource, training or financial. The financial needs – expenditures - that is requested annually from the ministry of finance is template that is resend every year regardless the real needs of the organization.

Facilities and Equipment

The respondents indicated an insufficient number of laboratories capable of diagnosis in mycology, nematology, entomology, and weed science. Respondents noted that Egyptian authorities do not have sufficient hardware and software capable of running risk analysis programs. The national organization also does not have access to relevant books, journals, and CD-ROMs. Furthermore, there is a lack in air filtered and temperature controlled containment facilities, advanced virology equipment and insect-proof rooms for inspection. Moreover, there is an inadequate record kept for each phytosanitary certificate issued.

Documented Procedures

The responses indicated that there are documented procedures for the identification of nematodes, arthropod pests, fungi and bacteria, viruses and virus like organisms but they are available at the research and pest control institute not through a consolidate organization. There are no regular official forms for crops that are grown for exports and although random pest forms are undertaken through pest control institute there is national database for the surveillance records. Moreover, there is no reliable record-keeping system for tracking pests and diseases nor guidelines for responding to exotic pest introduction that are consistent with international standards.

There are documented procedures and work instructions covering all the key aspects of the certification system. Furthermore, records are kept appropriately for each phytosanitary certificates.

Table (3): Matrix for the capacity needs identified for Egyptian Phytosanitary System

	Legislation	Facilities and equipment	Documents and procedures
Risk analysis	The legislation does not oblige the plant quarantine to base the health decision on Pest Risk Analysis available to conduct	As the legislation doesn't state this component there are no facilities to conduct Pest Risk analysis	Pest Risk Analysis is conducted informally through the plant quarantine phytosanitary unit in coordination with Research institutes
Surveillance	There are no legal statements in the plant quarantine legislation that the reasonability of the plant quarantine conduct pest surveillance, neither the international procedures	Non – adequate Facilities are available that the research institute undertake random surveillance	Crops grown for export are not officially formed on regular basis, targeted forms are not done when the pest occurrence is expected to be highest;
Certification	Certification integrity is not covered in the legislation – procedures for fraud cases are not covered	Facilities are not available for the application of electronic phytosanitary certification system- poor database and record keeping system	Adequate records are not kept of each phytosanitary certificate issued;
Inspection	Does not have a sufficient number of employees for inspection services, does not have adequate training for staff involved in inspection	Does not have sufficient laboratories and inspection equipment.	There are manuals for sampling – though there is no reference laboratories
Diagnosis	Does not have legal statement stating that the diagnosis falls under the responsibility of the plant quarantine	Does not have sufficient number of laboratories capable of diagnosis, or sufficient air-filtered and temperature controlled containment facilities	Not applicable – due to the absence of the department
Institutions	No legal mandate for having National Plant Protection Organization consolidation in the	No sufficient laboratories. There are no facilities under the authority of the NPPO	There is no comprehensive document system including all the activates that should be undertaken by the NPPO as assigned by the international standards
Exotic pest response	There is no legal text stating the responses to finding exotic pests	The national communication network is very poor doesn't facilitate the processes of reporting	There is no approved set of regulation for PRA of exotic pests

Source: applied form

CONCLUSION AND RECOMMENDATIONS

- The study highlighted the needs of the phytosaintary system in Egypt reflected in the gaps identified. Compliance with the international standards is an obligation as Egypt is a member of World trade organization as well as the FAO which oblige the compliance with standards and provisions of these organization. The study also emphasized that there are areas in which the international obligations are fully in compliance. The respondents as well were clearly aware of the international standards and obligation. For a comprehensive system of phytosaintary compliance legislations should comprise the technical international obligation. Consequently current staff should be trained and qualified staff may be hired to adequately apply the procedures required. As well infrastructure, laboratories and facilities should be Establishing legal framework mandating an authority for the responsibility of National Plant Protection Organization as stated in the IPPC
- Reviewing and Updating or the current plant quarantine legislation to include the scope of the NPPO as stated in the international standards
- Assigning a formal team for undertaking phytosaintary issues and change the structure of the phytosanitary system to include them officially.
- The legislation should state clearly the legal obligation of undertaking technical stated provisions of the SPS Agreement and the International Standards for Phytosanitary measures.
- Increasing inspection staff, managers, and trained specialists for pest diagnosis.
- Strengthening laboratories capable of diagnosis in mycology, nematology, entomology, advanced virology, and weed science by providing access to basic equipment.
- Using training and employment programs to increase the pool of qualified individuals to staff existing facilities and to operate existing equipment.
- Hardware and software for risk analysis should be provided.
- Providing air filtered and temperature controlled containment facilities and inspection facilities at points of entry.
- Establishing an adequate exotic pest response system enhanced, upgraded and established

Actions that should be considered to overcome the gaps identified:

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تقييم نظام الصحة النباتية في مصر

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استهدفت الدراسة تقييم مدى امتثال منظمة الصحة النباتية المصرية إلى المعايير الدولية من حيث السياق المؤسسي، الإطار التشريعي، الهيكل والإجراءات والوثائقية. يسهم التقييم في وصف الحالة الراهنة، وتحديد الفجوات الموجودة في المنظمة القائمة على التحكم بالنظم الصحية النباتية وتقديم توصيات للتغلب على الفجوات التي يتم تحديدها. يسهم تحديد الفجوات على المساعدة في تحسين نظام الصحة النباتية من خلال تحسين السلوك المنظمي ذات الصلة. ونظرا لأهمية الامتثال للمعايير الدولية وخصوصا في ساحة التجارة الزراعية فإن هذه الدراسة تشكل أهمية في فهم الأطر التي تتطلب تطوير في منظمة الصحة النباتية لتوائم النظم العالمية. ويعمل الامتثال من قبل منظمة الصحة النباتية للمعايير الدولية على زيادة فرص الوصول إلى أسواق جديدة والحفاظ على تنفق التجارة الحالية، وهذا بالتالي يحافظ على زيادة الدخل القومي و يخلق توازن بين الواردات و الصادرات.

البلدان التي تنفق إلى تطبيق المعايير الدولية بالطرق الملائمة قد لا تكون قادرة على التجارة بشكل كامل مع دول العالم، مما يؤثر بالتالي على الدخل القومي ومن ثم الاقتصاد. و من الجدير بالذكر أنه في حالة القصور في تطبيق الإجراءات المناسبة للواردات بسبب دخول الأقات الحجرية التي يمكن أن تسبب تدمير للنباتات و الزراعة و تؤثر سلبا على الإنتاج الزراعي و من ثم الصادرات الزراعية.

و استخدمت الدراسة نموذج متبني لتقييم قدرات الصحة النباتية (PCE) المعتمد من منظمة الأغذية و الزراعة لقياس مستوى الامتثال للمعايير الدولية في نظام الصحة النباتية المصرية.

وأظهرت الدراسة أن هناك فجوة واضحة في الإطار التشريعي والمؤسسي لمنظمة الصحة النباتية حيث كان الامتثال وفقا للإستجابات 28٪، أما بالنسبة للهيكل من حيث التقنيات الفنية، المرافق و المعدات كانت نسبة الامتثال 25٪ فقط. وعلى العكس كانت نسبة الإجراءات التوثيقية للإمتثال للمعايير الدولية 72٪.

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