

STDF/PG/316

## **STDF PROJECT GRANT APPLICATION**

Strengthening phytosanitary inspection and diagnostic  
services

**REPUBLIC OF AZERBAIJAN**

First version: 15-01-2011  
Final version: 01-08-2013

<b>Project Title</b>	Strengthening of the capacity in the pre-border plant quarantine points associated with inspection and diagnostic services in Azerbaijan
<b>Objective</b>	The improved provision of inspection and diagnostic services by the SPCS and Customs for maintaining the necessary level of phytosanitary protection for agricultural production and ecosystems in the country
<b>Budget requested from STDF</b>	1 000 000
<b>In-Kind Contribution (Government of Azerbaijan)</b>	2 000 000 Agriculture Competitiveness and Improvement Project (ACIP) + 250 000 SPC operational budget
<b>Total project budget</b>	3 250 000
<b>Duration:</b>	2.5 years from signature of implementation agreement
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<b>Full name and contact details of contact person for follow-up</b>	Mammedali Dunyamaliev  Chief of State Phytosanitary Control Service at Ministry of Agriculture of Republic of Azerbaijan  Tel.: (+99412) 490-24-64; Fax: (+99412) 490-24-64; E-mail: <a href="mailto:dfnx@mail.az">dfnx@mail.az</a>

## **Abbreviations**

ACIP – Agriculture Competitiveness and Improvement Project

FAO – Food and Agricultural Organization of the United Nations

IPPC – International Plant Protection Convention

EPPO – European and Mediterranean Plant Protection Organization

NPPO – National Plant Protection Organization

STDF – Standards and Trade Development Facility

SPS – Sanitary and Phytosanitary

PCE – Phytosanitary Capacity Evaluation

SPCS – State Phytosanitary Control Service of Republic of Azerbaijan

CQL – Central Quarantine Laboratory of SPCS

## I. BACKGROUND

### 1. SPS situation and issues

#### 1.1. General

The Republic of Azerbaijan is the largest country in the Caucasus region of Eurasia. It is a founding member of the Commonwealth of Independent States. Located at the crossroads of Western Asia and Eastern Europe it is bounded by the Caspian Sea to the east, Russia to the north, Georgia to the northwest, Armenia to the west, and Iran to the south. Azerbaijan has diplomatic relations with 158 countries and holds membership in several key phytosanitary related International Agreements including the International Plant Protection Convention, Convention on Biological Diversity, the Cartagena Protocol and holds observer status in World Trade Organization. Azerbaijan is a member of the European and Mediterranean Plant Protection Organization and actively participates in a number of its key regional meetings.

Azerbaijan shares borders with Georgia, Armenia, Iran, Turkey and the Russian Federation which constitutes their primary trading partnerships especially for import and export of plant based goods. The main income contributor to the GDP is oil production. Agriculture, however, plays an important role in the national economy and currently employs about 40% of the workforce. The main arable crops are wheat, vegetables, various fruits, grapes, cotton, tea and citrus. Azerbaijan is one of the leading countries among the CIS countries in terms of its rapid development of infrastructure and modernization of various sectors of its economy. In this context, the development of agrarian sector in the country's economy and increasing of the volume of export of plants and plant products is one of the most important issues of the day.

The country is geographically diverse and as such the climate varies significantly and presents climatic conditions that are favourable for establishment of a large number of plant pests. Azerbaijan is rapidly developing in terms of infrastructure and modernization of various sectors of its economy. In this regard, it is becoming more and more import dependent, a cause for concern often expressed by its President. At present, Azerbaijan carries out import-export operations of plants and plant products with more than 120 countries around the world. Azerbaijan imports plants and plant products principally from Italy, the Netherlands, Ecuador, Israel, Germany, Kazakhstan, Uzbekistan, Ukraine, Russian Federation, Turkey and other countries where known quarantine pests are potentially likely to spread through trade. Some of these quarantine pests that could potentially be imported through annual trade of plants and plant products include:

- *Trogoderma granarium* from Turkey, Iran, Israel;
- *Bemisia tabaci* from Germany, Israel, The Netherlands, Russia, Ukraine, Turkey, Iran etc.;
- *Erwinia amylovora* from Turkey, Iran, Israel, many European countries;
- Citrus tristeza virus from Turkey, Iran, Georgia, Italy;
- *Tilletia indica* from Iran etc.

#### 1.2. Policies and Legislation in force

Azerbaijan adhered to the International Plant Convention on 18 Aug 2000. Cognizant of the need for upgrading the national legislation for compliance to the Convention it requested the assistance from FAO for a revision of the phytosanitary legislation and regulations. The revision was completed in 2004. By order of Presidential Decree No. 226 of 20.04.2005, "Measures for the

Improvement of Management in the Agrarian Division (Establishment of the State Phytosanitary Control Service, Ministry of Agriculture)”, the State Phytosanitary Control Service was created to implement the Phytosanitary Law. The revised Phytosanitary Law No. 102 was enacted by Parliament on 12.05.2006. Most recently, upon request by the Ministry of Agriculture, FAO is assisting the SPCS in a project entitled “Support in improving the phytosanitary legislation in Azerbaijan and its harmonization with EU standards – TCP/AZE/3401 Baby 2 – TCP Facility”

### 1.3. Overview of the structure and functions of the State Phytosanitary Control Service (SPCS)

The administrative hub (headquarters) of the SPCS is located in the capital, Baku. The SPCS is centrally managed from here with functions that include a Press Unit, Finance Unit, Human resource Management Unit, General Administration, International Relations Focal Point and a Jurist. The SPCS has two main divisions: Plant Quarantine Division and Plant Protection Division.

The Plant Quarantine Division has 16 regional quarantine points and the Plant Protection Division has 58 points that are decentralised under individual managers. The SPCS has a workforce of 517 including Management, Administrative, technical and support staff. The SPCS diagnostic service is centralised with a Central Quarantine Laboratory, established during the Soviet Union Period, situated at its Headquarters in Baku City. The SPCS has in place a reporting structure that ensures collection of monthly, semi-annual and annual reports concerning mandated activities to the SPCS headquarters from all its divisions including regional offices.

On 11 November 2008, the President of the Republic of Azerbaijan, issued Decree number 12 "The implementation of the principle of "single window" to manage the processing of transported goods and vehicles through the state border-check points of the Azerbaijan Republic".

There is a signed agreement between the State Phytosanitary Control Service at the Ministry of Agriculture (State Service) and the State Customs Committee on October 11, 2010 for implementation of the stated decree and other associated legal instruments. The agreement covers implementation in terms of mutual exchange of relevant phytosanitary and trade information between the two agencies.

Hardware and software for a Unified Automated Management System (UAMS) has been installed at the State phytosanitary control service. This system is the principal element for the application of the principle of the "single window approach" in Azerbaijan. This network facilitates the exchange of relevant phytosanitary information and integrates the procedures for delivery of the Import Quarantine Permit issued by State Customs Committee. This permit is created in accordance with the applicable phytosanitary legislation and pest risk analysis is performed by the State Phytosanitary Service.

The process of official customs clearance of imported regulated articles is completed in destination after phytosanitary quarantine inspection and laboratory analysis. In order to prevent the introduction and distribution of harmful organisms in the country, the customs authorities constantly inform the State Phytosanitary Control Service at the Ministry of Agriculture concerning non-compliant imports. These are generally imports that are not accompanied by relevant documents or those where the existence of the risk of contamination by harmful organisms of import plants and plant products are identified as high by the SPCS. The Customs authorities apply corresponding measures whenever indicated by the SPCS.

In general, there is mutual exchange of information concerning phytosanitary quarantine inspection and laboratory diagnostics of regulated articles imported or exported into or from the territory of the Azerbaijan Republic and in this respect the work continues to take place between the two organizations. There is however a need to improve the procedures for customs clearance and for phytosanitary risk mitigation at border points since the SPCS staff are now no longer present at border points. Customs staff are included in the trainings of SPCS staff when relevant.

## **2. Links with national development strategies and policies**

The mandate of the SPCS is to ensure phytosanitary safety of the Republic of Azerbaijan on import, manufacture, storage and processing of plants and plant products. The mandate of the SPCS is directly linked to a number of national policies. Azerbaijan is a signatory to some 30 international environmental conventions, and commitments to these conventions are incorporated into a number of national and sectoral programmes.

Of these policies, policy № 3004, “State Program of the Republic of Azerbaijan to ensure food security - 2008-2015”, which was approved on August 25, 2008 is the most relevant. Paragraph 5.7 of this strategic program describes the role of the State Phytosanitary Control Service in contributing to the goal of national food security. Furthermore, the Government completed the development of National Medium Term Priority Framework (NMTPF) in Azerbaijan in 2011 which prioritizes the ongoing FAO activities/projects in Azerbaijan. There is no specific phytosanitary policy in force in the country however the newly formed State Phytosanitary Control Service is referenced in a number of national policies and development strategies including:

1. State Program on Reliable Food Supply of the Population of the Republic of Azerbaijan 2008-2015
2. State Program on socio-economic development of regions of the Republic of Azerbaijan 2009-2013
3. State program for the production of environmentally friendly products
4. State Program on Poverty Reduction and Sustainable Development of the Republic of Azerbaijan 2008-2015
5. State program to improve the ecological status of the Republic of Azerbaijan 2006-2010 (p.5.11)
6. The law on the liberalization of foreign trade
7. The Law on Protection of Biodiversity of Azerbaijan Republic

During the period 2006-2007 some 30 subsidiary legislation to the Phytosanitary Law (regulations) regulating plant quarantine and plant protection in Azerbaijan have been adopted. Potential climate change impacts are becoming of increasing concern since much of the climate change in Azerbaijan is characterized by steady warming, with rising levels of the Caspian Sea, land degradation and increasing aridity. In its Initial National Communication on Climate Change in 2000, the Government rated the country’s vulnerability as high for water resources, ecosystems, agriculture, energy and coastal areas, and as medium for forests. Increasing environmental emphasis of the Government in the legal and policy frameworks is reflected in a number of on-the-ground interventions addressing biodiversity loss, climate change, combating desertification and other global environmental challenges. It also has been enshrined in the National Programme on Environmentally Sustainable Social and Economic Development 2003-2010, National

Programme on Reforestation and Deforestation 2003-2008, the Comprehensive Action Plan on Improvement of the Environmental Situation 2006-2010.

### **3. Past, On-going or Planned Assistance**

Several initiatives have been implemented in the last 10 years to support plant quarantine in the Republic of Azerbaijan:

1. The FAO project, TCP/AZE/3201(July 2002 – June 2004) on strengthening phytosanitary services was successfully completed. Project cost was US\$ 287,000. The main results of the projects included the revision of the national phytosanitary legislation and establishment of the NPPO. A phytosanitary capacity evaluation was performed and training was provided on ISPMs considered a core function of the NPPO for implementation. The project procured office and laboratory equipment for the border points and Central Quarantine laboratory. The FAO Project catalysed other activities funded through the EU and other neighbouring country donors which further enhanced their capacity.
2. In 2004 an agreement was signed between the Ministries of Agriculture of Azerbaijan and Turkey (Turkish International Cooperation and Development Agency (TIKA)) for the long-term cooperation in the field of plant quarantine and plant protection. In the framework of this agreement TIKA procured equipment, worth USD \$ 27,000, for the Central Quarantine Laboratory and for 2 border points – Astara and Samur. In the same year conducted training on the basic principles of quarantine and fumigation which was attended by inspectors from all regions of Azerbaijan. In 2006, TIKA arranged for 4 inspectors to visit Turkey for training.
3. In 2008, The United States of America Department of Agriculture (USDA) arranged a training course from 23-26 September 2008, in Baku, on inspection of cargo including carry-on luggage of passengers.
4. In 2010, SPCS purchased 4 cars for mobile laboratories (2 of them Plant quarantine and 2 Toxicological), that due to financial difficulties had not yet equipped.
5. In 2011 - The SPCS submitted a proposal to the Ministry of Finance for state funding of USD\$ 580,000 for equipment and materials of which 50,000 manat (approximately US\$ 63,000) will be allocated to the quarantine services.
6. The STDF funded a PPG for development of this project proposal in which a Phytosanitary Capacity Evaluation of the Inspection and Diagnostic capacities of the SPCS were assessed. This activity was performed over the period December 2010 - January 15, 2011.
7. Phase II of a World Bank Agricultural Development and Credit project (ADCP) for Azerbaijan is expected to be completed early 2012. A phase III extension is currently being prepared for late implementation in 2013. The phase III project will have as one of its components the strengthening of SPS services including food safety, Animal Health and Plant Protection/Quarantine. The International Plant Protection Convention is collaborating with the World Bank preparation phase of the ADCP Phase III (now renamed Agriculture Competitiveness and Improvement Project or ACIP) on the component concerning SPCS

strengthening which complements this project.

8. The World Bank funded the complete application of the Phytosanitary Capacity Evaluation for the development of a national phytosanitary strategy and to ensure that the ADCP Phase III proposal (now ACIP) for strengthening phytosanitary services in Azerbaijan is harmonized with and builds upon the activities to be funded under the this STDF project. The expected allocation from the World Bank ACIP project is expected to be in the order of USD \$ 2 Million.

## **II. RATIONALE, JUSTIFICATION & OBJECTIVE**

### **4. Specific problem to be addressed**

After the collapse of the Soviet Union, the Quarantine Service of Azerbaijan lost its status and became a department of the Ministry of Agriculture. In the formative years of independent Azerbaijan the state allocated insufficient funding for the maintenance of the Plant Quarantine Service. Presently the situation has improved following the successful implementation in 2002-2004 of the FAO project TCP/AZE/3201 on strengthening the phytosanitary service. Azerbaijan has become active in the phytosanitary area participating consistently in annual key meetings of the IPPC, EPPO and the EC. Cooperation in the field of plant quarantine with the Soviet republics has been re-established since the collapse of the Soviet Union and she no longer functions in isolation for its development. Notwithstanding the improvements made over the past 10 years, the newly formed SPCS still faces numerous challenges in its ability to implement its mandate in plant health effectively. One main challenge is related to the establishment of the “single window principle” to manage the inspection of goods and transport imported at state border control points. A computerized import permit system has been established to regulate the import of plants and other goods. These permits are issued only at the main office of the SPCS. The computerised system was developed by Customs. To mitigate the impact of a lack of presence of SPCS staff at the border points, the SPCS has developed a plan for improving phytosanitary control near the border by setting up regional laboratories at pre-border points and strengthening the capacity of the Central quarantine laboratory. The SPCS considers the formation of pre-border regional offices equipped with quarantine laboratories and acceptable alternative to reduce risks associated with imported plants and plant products after customs clearance. These pre-border points are being established near the border control points. However, the principal challenge to be addressed in this project is “the lack of capacity by the SPCS to ensure the phytosanitary security of imported consignments of regulated articles particular the detection and diagnosis of plant quarantine pests”. Pre-border inspection points are contemplated in national legislation and can consist of places where the NPPO designates as points for further inspection of high risk commodities or consignments. These installations may be operated by third party under official authorisation by the NPPO. The Customs already cooperates with the SPCS by informing them of consignments that are suspect and require their intervention. These pre-border points may include diagnostic facilities and/or treatment facilities to ensure that trade flows (import and export). The precise operation of these authorised points will require coordination and agreement with Customs and other relevant bodies in Azerbaijan. The project aims to ensure that the proper regulatory safeguards are instituted, particularly for import, whether through pre-border controls or through additional mechanisms. Other challenges are expected to be addressed under the World Bank ACIP project previously referred to.



## 5. Target Beneficiaries

The primary beneficiaries of the project will be the technical Inspection and Pest Diagnostic Staff of the SPCS and Customs Service responsible for the management of consignments at points of entry. Secondary beneficiaries of the project will be the producers and farmers in terms of expected reduction in spending costs for eradication or management of quarantine pests and in turn leading to a positive impact on the environment and ecology as a whole. Other beneficiaries include the trading partners of the Republic of Azerbaijan as a result of an increase in the confidence of its ability to ensure phytosanitary security of exported consignments.

## 6. Ownership and stakeholder commitment

Stakeholder	Main Contact	Role/Commitment
State Phytosanitary Control Service	Mammedali Dunyamaliyev, Chief, State Phytosanitary Control Service, Ministry of Agriculture of Republic of Azerbaijan Tel.: (+99412) 490-24-64; Fax: (+99412) 490-24-64; E-mail: <a href="mailto:dfnx@mail.az">dfnx@mail.az</a>	Project Implementation
State Customs Service	Mahir Ibrahimov AZ 1073, Baku, Inshaatchilar Ave., 2 E-mail: <a href="mailto:external@customs.gov.az">external@customs.gov.az</a> Tel.: (99412) 438-80-80 (99412) 539-69-85 Fax: (99412) 498-18-36	Collaborator and Beneficiary
Scientific-Research Institute of Zoology	Ilham Alakbarov, director of the Institute of Zoology, Azerbaijan National Academy of Sciences, AZE 1073, Baku, A. Abbas-zadeh str., passage 1128, block 504 Tel.: (99412) 539-73-71 Tel/fax: (99412) 539-73-53 E-mail: <a href="mailto:izb@dcacs.ab.az">izb@dcacs.ab.az</a>	Collaborator
Scientific-Research Institute of Botany	Valida Ali-zadeh, director of Azerbaijan National Academy of Sciences Institute of Botany Badamdar shosse 40, Baku-AZ 1073 Azerbaijan Republic Tel.: (99412) 502-43-30, (99412) 502-44-80 Fax: (99412) 497-09-94	Collaborator
Azerbaijan National Academy of Sciences Genetic Resources Institute	Zeynal Akbarov, director of the Institute, 155 Azadlig Ave., Baku, AZ1106 Tel.: (99412) 562-91-71, (99412) 562-94-62 Fax: (99412) 449-92-21 E-mail: <a href="mailto:akparov@yahoo.com">akparov@yahoo.com</a>	Collaborator
State Agrarian University	Nizami Seyidaliyev, pro-rector of the University,	Collaborator

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WB	The World Bank, 1818 H Street NW, Washington DC, 20433 Office tel: 1-202-458-5301 Fax: 1-202-614-5301	Project Implementation
WB Baku	Rufiz Vakhid Chirag-Zade, Senior Operations Officer, Baku, Azerbaijan. Tel: (+99412) 4921941 Fax: (+99412) 4926873 WBG:5255+242 <a href="http://www.worldbank.org.az">www.worldbank.org.az</a>	Project Management Unit (ACIP)
FAO	Mr. Hafiz Muminjanov, FAO-SEC, Ivedik Cad. 55, Yenimahalle, Ankara, Turkey Tel: +903123271705 E-mail: <a href="mailto:hafiz.muminjanov@fao.org">hafiz.muminjanov@fao.org</a>	Lead Technical Officer
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IPPC	International Plant Protection Convention, Food and Agriculture Organization of the United Nations, Viale delle Terme di Caracalla, 00153, Rome. Italy Tel: +(39) 06 - 570-53613 Fax: +(39) 06 - 570-54819	Project Implementation and Lead Technical Unit

## 7. Relevance for the STDF

The project is particularly relevant since it is directed to the enhancement of the practical capacity for phytosanitary inspection and diagnostic services in Azerbaijan in accordance with the international standards for phytosanitary measures of the IPPC. While the project will not cover all the needs of SPCS, it will help to create synergy among agencies involved to varying degrees in the phytosanitary improvement of the country's agriculture.

The World Bank ACIP project:

This STDF project is expected to contribute to the implementation of the comprehensive national phytosanitary capacity building strategy over the next 6 years. The World Bank funded the development of the strategy during the project grant preparation phase of this STDF project using the IPPC PCE tool. The World Bank ACIP project in 2013 will provide an additional sum of 2M USD to support implementation of the strategy. This STDF intervention is closely linked to the component of the ACIP project which aims to modernize the Food safety, Sanitary and Phytosanitary System. The total value of the World Bank project is circa USD 19M. This component is intended to ensure that the project inputs support compliance with international standards for food safety, sanitary and phytosanitary requirements to facilitate approximation with the requirements for regional or international trade and to create unique market opportunities for

import substitution in the agri-food sector. The development of a vibrant private agri-food sector and competitive value chains from farm-to-fork value would be based on the existence of a credible, science-based regulatory framework and internationally endorsed food safety, sanitary and phytosanitary system. This project component is intended to provide the basis for establishment of this framework. Activities under Component A will be grouped into three subcomponents: (i) National Food Safety Strategy and Capacity Building; (ii) Upgrading Plant Health and Phytosanitary System (iii) Animal Health and Veterinary Services. The two components have been developed in tandem with close collaboration of the World Bank and the FAO project formulators. The linkage between the two projects both in terms of resource allocation and project coordination is expected to mitigate a number of risks associated with projects of this type. The WB will benefit from FAO technical expertise and the STDF and FAO will benefit from the WB's project management expertise and close linkages to the political and management hierarchies in the Azerbaijan Government.

#### Benefits:

The expected combined impact of the STDF and ACIP interventions is to reduce the potential impacts of phytosanitary risks on agriculture, the environment and the economy. This is directly compatible with the general policy of the Government of the Republic of Azerbaijan to invest in value chains to open up market access of plants and plant commodities, among other agricultural products, to improve the increasing demand of the public for quality and safety of food products destined for the local market and to reduce import dependence in the face of rapid economic growth particularly in the industrial, financial and services sectors. In addition, the project will have additional spin-off benefits in reinforcing the collaborative mechanisms between line ministries and institutions that directly or indirectly have some responsibility to safeguard agricultural imports, exports, production and plants in uncultivated environments from pests.

Once this project is completed, the SPCS is expected to be able to better meet its information exchange obligations towards other NPPOs through improved development of phytosanitary measures that are more science based. In addition the SPCS will have improved its capacity to negotiate market access agreements, access to wider range of phytosanitary material and greater ability to interact with the phytosanitary community including being in a better position to take advantage of training opportunities in common international languages.

### **8. Development Objective**

The republic of Azerbaijan is in a period of rapid economic growth (+10% 2008 est.). The main driver of this growth is the energy sector. There is a growing dependence on imports including foodstuffs (value of food imports USD \$ 328 million excl. fisheries – 2005 est.). The export sector is valued at 29 Billion US dollars of which food comprises (USD \$234 million excl. fisheries – 2005 est.) The share of agriculture to total GDP was 25.18% in 1995 which decreased to 7.09% in 2009. Cognizant of the gap between growth of other sectors of the economy and the agricultural sector, the Government of Azerbaijan has begun focussing its attention to development of agricultural value chains, improvement of the quality and safety of food products in the local market and reduction of import dependence. At the time of writing of this project proposal, the rumour mill indicated that the Government of Azerbaijan was considering some level of restructuring that could include the consolidation of some agricultural health services, particularly the Animal health and Plant Protection Services. The outputs of this STDF project will be directly compatible in the event this happens and no negative impact is foreseen should

this restructuring occur. Thus, the principal development objective that this project aims to contribute to is: The development of agriculture in order to improve the welfare of its people (food security) and to the environmental protection of the Republic of Azerbaijan.

### **9. Expected End-of-project Situation and Sustainability of Project Results**

At the end of the project, it is expected that the inspection and diagnostic capabilities of both the SPCS and Customs Services at border points will be improved. The improved ability of these institutions to carry out required functions to monitor the phytosanitary situation in the country, to train inspectors of SPCS, Customs and possibly other organizations, involved in phytosanitary control on a permanent basis and diagnose the potential pest risks will lead to the maintenance of the necessary level of phytosanitary protection for agriculture production in the country. In addition, there will be a focus on building the capacity of the staff of the SPCS through language training. At present the SPCS is severely handicapped (except in the Russian language) to take advantage of training, to participate effectively in international phytosanitary fora and negotiate market access including the conduct of pest risk analyses. The results of the project will be sustainable as it builds on existing infrastructure, technical expertise and institutions in the country. Furthermore, the project will be complemented by another non-grant funded initiative - the World Bank ACIP project in 2012-15.

## **III. IMMEDIATE OBJECTIVES, OUTPUTS & ACTIVITIES**

### **10. Objectives, outputs and activities, including log-frame and work plan**

The immediate objective of the project is to: maintain the necessary level of phytosanitary protection for agricultural production and ecosystems in the country particularly as it relates to the Import and Export regulatory system.

The project aims to address gaps in the pest diagnostic system with the expectation that by the end of year 2 the system will have been markedly evolved. While the project will not be providing major equipment and infrastructure for pest diagnostics it will build on actions already being taken by the SPC. In particular, the SPC has identified national funds for major equipment purchases for laboratories and investments for infrastructure throughout the country. In addition the World Bank supported ACIP project is expected to supplement these investments further through the long term training of key phytosanitary diagnostic staff in the central laboratory of the SPC.

The project also intends to improve the implementation of IPPC - ISPM 20 – relating to the import regulatory system. It will focus on building the capacity of staff in the SPC and Customs both at border and pre-border levels. This activity is directly linked to the actions on pest diagnostics and will require close coordination with the technical staff of the SPC. The ACIP project is expected to supplement this component of the project with the strengthening of the Pest Risk Analysis Unit of the SPC. In addition the project will be conducting a very unique activity in enhancing the capabilities of the technical staff of the SPC. It will institute over the course of the two year project cycle language training to as many staff at technical and management levels to ensure that the service can operate in the international trading environment on as equal a footing as possible. This will enhance their ability to negotiate market access, communicate cases of non-compliance, communicate matters of national policy, and participate more fully extra-regional in international phytosanitary fora and training. The project also expects to conduct training for mid

and senior level managers in a number of management related areas including project management, presentation skills and negotiation skills. These are all essentials for management and communicating in phytosanitary and trade environments.

Finally the project aims to address a few shortfalls of the export certification system. The PCE conducted in 2011 revealed that there is a significant lack of capacity in the staff to certify exports and in particular there is a lack of documented procedures. The project seeks to address this need directly and links it to the pest diagnostic support component of the project. There will be one activity under the project that will implement a standardized approach to pest surveillance in a commodity of export value. Pests detected over the next two years will be processed using the enhanced abilities of the SPC. These pests will be listed in a national database as the national pest list. This component will also be linked to the ACIP project on the aspects concerning PRA and Export Certification in which additional crops will be surveyed. Pests identified in the PRA component of the ACIP project as organisms of phytosanitary concern will be listed in the national regulated pest list. The STDF project will also develop, over the course of the two year project cycle, a phytosanitary information repository software and database. This will be a useful tool for the SPC in making phytosanitary decisions and facilitating many aspects of its work.

### 11. Public-public or public-private cooperation

The State Phytosanitary Control Service will coordinate its actions with the State Customs Service in order to mitigate the risks of introduction of plant pests in imported commodities. Building a better cooperation framework for these two government agencies will allow for more flexibility and sharing of both resources and mandates as the “single window system” evolves. Other collaboration with public organizations include with the State Scientific Institute of Botany and Zoology. While the collaboration is limited between these institutes and the SPCS at present, the inclusion of these institutes as collaborators will be crucial in building national capacity for pest diagnostics in the near future.

### 12. Risks and it’s management

In accordance with the results of the PCE, there are different kinds of risks that could affect the implementation of the project.

Risk	Impact	Probability	Mitigation/Assumptions
<p><b>Cooperation with Customs for management of phytosanitary risks:</b></p> <p>Negotiate with Customs authorities on how to improve phytosanitary import control. This may take some time for SPCS and Customs authorities to agree on re-establishing inspections at border points or assume another solution with a similar risk reduction</p>	Medium	Medium	<p>To reduce this risk, SPCS aims to be very active and persistent in communication with Customs to develop an adequate scheme of cooperation to improve the quality inspection of imported goods in accordance with provisions of IPPC. Basis for such a relationship has already been created and should be continued. The World Bank ACIP will continue supporting the SPCS through the ACIP project up to its end date</p>

level.			
<p><b>Sustainable funding of activities:</b></p> <p>The Government cannot allocate the necessary funds to support the activity, lack of budget for subscription and translation of necessary documents may complicate the implementation of the project. Plans, database etc. may not be supported with national resources.</p>	Medium	Low	To address all these issues pertaining to financing SPCS should work actively with Ministry of Agriculture and to seek alternative funding sources such as government or international programs. It is important for SPCS to plan it's own budget of the organization to maintain the necessary expenses to carry out its core activities, such as diagnosis, monitoring, inspection in order to provide for current expenses and training of staff.
<p><b>Provision of equipment under this project does not go far enough to build capacity:</b></p> <p>Equipment is not enough to make significant impact for the improvement of diagnostic capacity.</p>			Collaboration with the World Bank has been initiated where equipment required for this project will be procured under a separate project managed by the World Bank (ACIP).
<p><b>Retention potential of qualified staff:</b></p> <p>Staff turnover may reduce the number of staff trained.</p>			It is necessary to plan each year a budget for training staff, including new ones. Creating a training centre on the base of SPCS will help solve this problem.
<p><b>Language:</b></p> <p>The official language of the Republic of Azerbaijan is Azeri. Russian is spoken or at a minimum understood. Staff in the SPCS is not able to communicate to a high degree in any UN language. With respect to English, a handful speaks English but just below the basic level at best.</p>	High	High	Both the STDF and World Bank projects will incorporate language training to ensure that the staff can take advantage of advanced training, negotiate market access, improve participation in international phytosanitary fora and conduct the business of the NPPO in other UN languages.

#### IV. INPUTS & BUDGET

##### 13. Inputs and estimated budget

The table below presents the budget of the STDF project. The SPCS will provide an in-Kind contribution to the project in terms of covering local costs such as transport in connection with project activities, use of premises, office technical assistance (computers, printing, phone,

internet), and staff time as and when required among others. The SPCS is also covering the costs of some infrastructure improvements and have provided 1 mobile unit (van) for use as a mobile pest diagnostic facility.

The project funds will be further supplemented by World Bank funding in the order of USD 2 million as co-financing. The project will be co-managed with STDF implementation agency. The project steering committee will ensure that procurement of consultants and non-expandable equipment is well coordinated to avoid duplication or overlap.

PROVISIONAL BUDGET						
Project Hierarchy	Activities	Input	Break down	STDF Contribution	SPCS	Total Budget
	Project management and oversight	Professional		95000	0	95000
		Admin support		20000	0	20000
		General Operating Expenses		15000	0	15000
<b>Sub-Total</b>				<b>130000</b>	<b>0</b>	<b>130000</b>
<b>WB ACIP Co-financing</b>						<b>2000000</b>
Outcome 1: Pest diagnostics service strengthened	Activities	Input		STDF Contribution	SPCS	Total Budget
<b>Expected Output 1.1. Central Plant Quarantine laboratory equipped</b>	1.1.1 Develop an operational plan for modernizing the phytosanitary diagnostic service	National workshops (3) + meeting facilities + DSA and Travel for stakeholders + other meeting costs		5000	20000	25000
	1.1.2. Equipment purchase and installation and improvement of infrastructure	See equipment list Annex 3		40000	0	40000
<b>Sub-Total</b>				<b>45000</b>	<b>20000</b>	<b>65000</b>
<b>Expected Output 1.2. SPCS and relevant Customs Staff professionals trained in the field of laboratory diagnostics</b>	1.2.1 Conduct training needs assessment, prioritize training, identify local and external sources of training	Meetings (2) + DSA and travel costs + course development costs + translation costs		6000	15000	21000
	1.2.2 Conduct training of 20 SPCS and 10 Customs inspectors in key pest diagnostic techniques.	External consultant	36000	65000	30000	95000
		DSA and Travel	12000			
	Activities:	mini-laboratory equipment	13000			
	- Selection of key pests of concern (Bacteria, Fungi, Nematodes, Arthropods, Virus etc.).	other meeting costs including supplies and materials	4000			
	- Selection of key diagnostic tests by pest type.					
- 1X training per year of 10 participants of 14 days duration minimum each						
<b>Sub-Total</b>				<b>71000</b>	<b>45000</b>	<b>116000</b>

<b>Expected Output 1.3. Standard documented operational procedures for laboratories including sampling and diagnostic protocols developed</b>	1.3.1 Identify the diagnostic protocols needed	National workshops (3) + meeting facilities + DSA and Travel for stakeholders + other meeting costs		0	5000	5000
	1.3.2 Identify mechanism for collaboration by local institutes for the development of diagnostic protocols	Working group meetings (3) + meeting facilities + DSA and Travel for stakeholders+ other meeting costs		6000	30000	36000
	1.3.3 Develop documented standard operational procedures for laboratories and diagnostic protocols with assistance of internal and external experts	External consultants	35000	65000	9000	74000
		national consultant	12000			
		editor	3000			
		research costs including subscription to online journals, purchase of books	1500			
		translation costs, dtp and printing	10500			
computer and printer purchase + internet access	3000					
<b>Sub-Total</b>				<b>71000</b>	<b>44000</b>	<b>115000</b>
<b>Expected Output 1.4. Create a collection of reference samples required for phytosanitary diagnostics</b>	1.4.1 Prioritize the area where good biological and information reference materials are needed	Working group meetings (3) + meeting facilities + DSA and Travel for stakeholders + other meeting costs		0	2500	2500
	1.4.2 Identify local and international institutes with biological reference materials and get a copy of catalogue	Working group meetings (3) + meeting facilities + DSA and Travel for stakeholders + other meeting costs		0	2500	2500
	1.4.3 Purchase of reference materials and equipment and establish the collection (Appendix 5)	External consultants	17500	65000	11000	76000
		national consultant	30000			
		Equipment purchase including entomological collection and curation equipment, plant pathology collection equipment, herbarium equipment.	17500			
<b>Sub-Total</b>				<b>65000</b>	<b>16000</b>	<b>81000</b>
<b>Expected Output 1.5. Develop strategic plan for improvement of diagnostics</b>	1.5.1 Training in strategic planning and management of 5 senior technical staff of pest diagnostic service	3 course fees over 2 years + DSA and Travel + other course costs		35000	5000	40000
	1.5.2 Development of a strategic plan for diagnostic service	Working group meetings (3) + meeting facilities + DSA and Travel for stakeholders + other meeting costs		8000	5000	13000
<b>Sub-Total</b>				<b>43000</b>	<b>10000</b>	<b>53000</b>
<b>Outcome 1 Total</b>				<b>295000</b>	<b>135000</b>	<b>430000</b>



Outcome 2: To improve management of import regulatory system	Activities	Input		STDF Contribution	SPCS	Total Budget
<b>Expected Output 2.1. Capacity for inspection and pest risk reduction improved at border points</b>	2.1.1 SPCS to propose to Customs several options for re-establishing import inspection at or near border points	Working group meetings (3) + meeting facilities + DSA and Travel for stakeholders + other meeting costs		3000	5000	8000
<b>Sub-Total</b>				3000	5000	8000
<b>Expected Output 2.2. Priority procedures written and distributed</b>	2.2.1 Develop documented and standard operating procedures for national import regulation system with assistance of internal and external experts	External consultants	17500	50000	5000	55000
		national consultant	15000			
		editor	3000			
		research costs including subscription to online journals, purchase of books	1500			
		translation costs, dtp and printing	10000			
		computer and printer purchase + internet access	3000			
<b>Sub-Total</b>				<b>50000</b>	<b>5000</b>	<b>55000</b>
<b>Expected Output 2.3. SPCS and customs inspectors trained in inspection and basic pest diagnostics</b>	2.3.1 Conduct training needs assessment, priorities training, identify local and external sources of training	Working group meetings (3) + meeting facilities + DSA and Travel for stakeholders + other meeting costs		6000	12000	18000
	2.3.2 Conduct training of 20 SPCS inspectors and 10 Customs inspectors over 2 years in system of import regulations	External consultants	17500	72000	6000	78000
		National Consultant	6000			
	Activities:	workshop facilities	2400			
	- Assessment of technical requirements and capacities for inspection.	DSA and Travel for inspectors	32000			
	- Preparation of training materials	inspection kits purchase	10100			
	- 1X training per year of 15 participants of 14 days duration minimum each	other meeting costs including supplies and materials	4000			
<b>Sub-Total</b>				<b>78000</b>	<b>18000</b>	<b>96000</b>
<b>Expected Output 2.4. SPCS staff language and management skills improved.</b>	2.4.1 Conduct training needs assessment, priorities training, identify local and external sources of training	Working group meetings (3) + meeting facilities + DSA and Travel for stakeholders+ other meeting costs		0	6000	6000
	2.4.2 Conduct training of SPCS inspectors and Customs inspectors over 2 years in selected languages and management courses.	3 group language courses (Any three UN languages): Local Contracts + course fees + DSA and Travel + other course costs	24000	72000	7000	79000
		1 Course for Senior Staff on Negotiations Skills: Local Contracts + course fees + DSA and Travel + other course costs	16000			

		1 Course for Senior Staff on Presentation Skills: Local Contracts + course fees + DSA and Travel + other course costs	16000			
		1 Course for Senior Staff on project management: Local Contracts + course fees + DSA and Travel + other course costs	16000			
<b>Sub-Total</b>				<b>72000</b>	<b>13000</b>	<b>85000</b>
<b>Outcome 2 Total</b>				<b>203000</b>	<b>41000</b>	<b>244000</b>
<b>Outcome 3: To improve pre-border inspection and export certification system in Azerbaijan</b>	<b>Activities</b>	<b>Input</b>		<b>STDF Contribution</b>	<b>SPCS</b>	<b>Total Budget</b>
<b>Expected Output 3.1. SPCS inspectors trained in inspection and basic pest diagnostics</b>	3.1.1 Conduct training needs assessment, priorities training, identify local and external sources of training	Working group meetings (3) + meeting facilities + DSA and Travel for stakeholders + other meeting costs		5000	10000	15000
	3.1.2 Conduct training of 80 inspectors over 2 years in system of export certification	National Pest Surveillance activity for 1 commodity and pest:		220000	30000	250000
	Activities:					
	- Assessment of technical requirements and capacities for inspection.					
	- Preparation of training materials					
	- 2X training per year of up to 40 participants per year. Each training will consist of up to 14 days duration with further field assignments and evaluations.	External consultants	68000			
		national consultant	36000			
		workshop facilities	4000			
	DSA and Travel for inspectors and field work	86000				
	field kits purchase	18000				
	other meeting costs including supplies and materials	8000				
<b>Sub-Total</b>				<b>225000</b>	<b>40000</b>	<b>265000</b>
<b>Expected Output 3.2. Computerized database on import requirements of importing countries created</b>	3.2.1 Contract a national consultant who will lead the establishment and subsequently manage a computerized database	External consultants + national consultant + meeting costs (5) + DSA and Travel + other meeting costs		8000	8000	16000
	3.2.2 Identify experts, and cost that will develop the computerized database	Local Contract for Computer programming Firm + External consultants + national consultant + Development costs + DSA and Travel + misc costs		60000	9500	69500
	3.2.3 Install the database and train SPCS staff to use it	Local Contract for Computer programming Firm + External consultants + national consultant +		34500	8000	42500

		Development costs + DSA and Travel + misc costs (e.g. routers, network equipment etc.)				
<b>Sub-Total</b>				<b>102500</b>	<b>25500</b>	<b>128000</b>
<b>Expected Output 3.3. The necessary documented procedures for export certification developed</b>	3.3.1 Develop documented and standard operational procedures for export certification system with assistance of internal and external experts	External consultants	17500	44500	8500	53000
		national consultant	9500			
		editor	3000			
		research costs including subscription to online journals, purchase of books	1500			
		translation costs, dtp and printing	10000			
		computer and printer purchase + internet access	3000			
<b>Sub-Total</b>				<b>44500</b>	<b>8500</b>	<b>53000</b>
<b>Outcome 3 Total</b>				<b>372000</b>	<b>74000</b>	<b>446000</b>
<b>Project Total</b>				<b>1000000</b>	<b>250000</b>	<b>3250000</b>

#### 14. Cost-effectiveness

The main limitation with the staff of the SPCS in terms of capacity development is the inability to communicate in languages other than Azeri and Russian. Two of its personnel who were functional in English have left the SPCS staff in the past two years. The project will try to source training opportunities in the Russian Federation and other countries that are compatible in this language perhaps in Latvia or Lithuania, where there are Russian-speaking specialists in the field of plant quarantine. The linkage of this project with the World Bank ACIP project opens up an element of sustainability wherein the Staff of the SPCS can be upgraded in terms of language and lead to more specialized training in other countries in Europe and beyond. The project will be cost effective in the long term as it will establish a base of competence that will extend into the immediate future and result in an increase in capacity of the human resources in the SPCS and the country as a whole.

#### V. PROJECT IMPLEMENTATION & MANAGEMENT

##### 15. Implementing / supervising organization

State Phytosanitary Control Service at Ministry of Agriculture of the Republic of Azerbaijan  
 Chief of SPCS - Mammedali Dunyamaliev  
 Tel.: (+99412) 490-24-64;  
 Fax: (+99412) 490-24-64;  
 E-mail: [dfnx@mail.az](mailto:dfnx@mail.az)

##### 16. Project management

The National Focal Point in facilitating the implementation of this project will be the Head of the SPCS. In this capacity the department will work closely with the Implementing Agency who has been identified as the FAO. The FAO will identify a Project management Unit (PMU)

which will provide general oversight of project implementation. The PMU will work closely with the World Bank whose office is based in Baku to ensure close synergy of this project with the ACIP project. The World Bank will be implementing the ACIP project which will contain a component that complements the activities of the STDF project. The World Bank is expected to engage the International Plant Protection Convention, under separate arrangements to provide technical supervisory services over the life of both the STDF and ACIP projects. Other project management arrangements include:

- (a) The National Project Steering Committee (NPSC): This will be constituted with representatives of:
  - State Phytosanitary Control Service
  - State Customs Service
  - Scientific-Research Institute of Zoology
  - Scientific-Research Institute of Botany
  - Azerbaijan National Academy of Sciences
  - Genetic Resources Institute
  - State Agrarian University
  - World Bank Project Management Unit (and ACIP project)
- (b) The committee will be chaired by the Head of the SPCS. The committee will meet as frequently as required.
- (c) The collaborating ministries and/or departments/Institutions shall be represented by high ranking officers who are in a position to expedite consultation and authoritative decision-making.
- (d) The PMU will be responsible for reviewing overall progress of the project and provide the administrative decision-making. The PMU will be responsible for reviewing overall progress of the project and provide the administrative support to overcome constraints during implementation.

## **VI. REPORTING, MONITORING & EVALUATION**

### **17. Project reporting**

The PMU will prepare an inception report which will contain a detailed work plan complete with targets and milestones. Thereafter the PMU will produce 6 Monthly monitoring and supervision reports highlighting progress and constraints during implementation. At the end of the project a draft terminal report will be prepared using the standard STDF format.

**The PMU will also prepare a project factsheet, as per the template provided by the STDF, and update it, if necessary, every six months.**

Over and above the delivery of the principal reports already mentioned, each consultant that has been engaged under the project will provide an end of assignment report.

The Project Coordinator (Head of the SPCS) will coordinate day to day activities of the project, ensure that the project meets its deadlines, help organize meetings, trainings and workshops and provide periodic progress reports.

### **18. Monitoring and evaluation, including performance indicators**

Progress of the project will be monitored in accordance with the revised work plan as detailed in the inception report. The PMU and Project Steering Committee should periodically monitor the implementation stages in accordance with the terms and key indicators specified in the logical framework as well as milestones and targets established in the annual work plans. Targets will be identified with the WB - ACIP management unit.

There should be an overall project evaluation in accordance with final report including recommendations at the end of the project.

### **19. Dissemination of the projects results**

All project results will be published on the website of the SPCS and other websites of project collaborators when requested. The principal project reports will be posted on the STDF website and in the appropriate portal of the World Bank. An annual workshop will be held to provide stakeholders with an update on the progress of the project.

## APPENDIX 1: Logical Framework

Overall Objective	Key Indicator	Means of Verification	Assumptions / Risk
Development of Agriculture of the Azerbaijan Republic in order to improve people's welfare and protection of our environment	<ol style="list-style-type: none"> <li>1. Increased crop yields</li> <li>2. Reducing the number and spread of pests</li> <li>3. The number of agricultural products per capita</li> </ol>	<ol style="list-style-type: none"> <li>1. Statistical Information, Ministry of Agriculture</li> <li>2. Annual information on the phytosanitary condition of SPCS</li> </ol>	Adverse climate change are affecting agricultural productivity
Specific Objective	Key Indicator	Means of Verification	Assumptions / Risk
Maintain the necessary level of phytosanitary protection for agricultural production and ecosystems in the country	<ol style="list-style-type: none"> <li>1. Increase in value and volume of exports</li> <li>2. Volumes and rate of commodity inspection and regulatory pest diagnostics conducted</li> </ol>	Laboratory data Country trade statistics NPPO reports NPPO budget reports Annual reports	Trade disruptions due to non-technical reasons Prolonged market access negotiations (reciprocal).
Outcomes	Key Indicator	Means of Verification	Assumptions / Risk
1. Pest diagnostics service strengthened	<ol style="list-style-type: none"> <li>1. Number of examinations conducted by experts</li> <li>2. number of identified quarantine pests</li> </ol>	<ol style="list-style-type: none"> <li>1. SPCS records and reports</li> <li>2. Results of ring testing</li> </ol>	Insufficient funding for the purchase of necessary equipment and training of laboratory specialists
2. Management of import regulatory system improved	Number of identified quarantine pests	SPCS Records	SPCS does not conduct inspections of imported goods at the border
3. Pre-border inspection and export certification system in Azerbaijan improved	<ol style="list-style-type: none"> <li>1. The volume of used funds</li> <li>2. Reduce number of notifications from importing countries</li> </ol>	Relevant reporting data	Proposals may not be accepted by donors
Outcome 1 – Expected outputs	Key Indicator	Means of Verification	Assumptions / Risk
1.1. Central Plant Quarantine laboratory equipped	Number of laboratories established, staffed and operational by 2013	SPCS records and reports	<ol style="list-style-type: none"> <li>1. Insufficient funding</li> <li>2. Lack the necessary expertise</li> </ol>
1.2. SPCS and relevant Customs Staff professionals trained in the field of laboratory diagnostics	Number of people who have been trained (at the end of the project)	<ol style="list-style-type: none"> <li>1. The volume of financial resources expended</li> <li>2. SPCS records and reports</li> </ol>	Specialists may resign from the lab
1.3. Standard documented operational procedures for laboratories including sampling and diagnostic protocols developed	The number of documents developed by the end of project.	1. The volume of used funds (budget spent on development of documented procedures )	Not enough relevant professionals and their time to design documents
1.4. Create a collection of reference samples required for phytosanitary diagnostics	<ol style="list-style-type: none"> <li>1. The number of species of pests in the collections of the SPCS</li> <li>2. The volume of used funds</li> </ol>	SPCS records and reports	insufficient funding

1.5. Develop strategic plan for improvement diagnostics	Developed a strategic plan for the diagnosis	1. The amount of funding to develop a strategic plan	It may be difficult to implement plans
<b>Outcome 2 – Expected outputs</b>	<b>Key Indicator</b>	<b>Means of Verification</b>	<b>Assumptions / Risk</b>
2.1. Capacity for inspection and pest risk reduction improved at border points	1. The volume of imported goods inspected 2. The number of identified pests	SPCS and Customs Service records	SPCS and Customs signed an agreement on cooperation in inspection of imported goods in order to reduce the risk of penetration of harmful organisms
2.2. Priority procedures written and distributed	Number of procedures written and distributed by the end of 2013	Budget spent for development of procedures	SPCS and customs will use and update the procedures
2.3. SPCS and customs inspectors trained in inspection and basic pest diagnostics	1. The number of detections of quarantine organisms 2. Quality of inspections	Data from reports on the identification of quarantine and other organisms	SPCS and custom agree on re-establishing inspections at border points or other solution with similar risk reduction level
2.4. SPCS staff language and management skills improved.	The number of staff trained and level of proficiency	Budget spent, reports	STDF approve the inclusion of equipment purchase in the project; Equipment is not enough to make significant impact for the improvement of inspection services
<b>Outcome 3 – Expected outputs</b>	<b>Key Indicator</b>	<b>Means of Verification</b>	<b>Assumptions / Risk</b>
3.1. SPCS inspectors trained in inspection and basic pest diagnostics	Number of trained inspectors The number of detections of quarantine organisms	Funds spent on training, reports	Trained inspector may resign
3.2. Computerized database on import requirements of importing countries created	Number of countries and records included in the database	Budget spent on development of database; database printouts	Experts in the development of this program may not be available
3.3. The necessary documented procedures for export certification developed	The number of established procedures and their presence in the quarantine stations at the end of 2013	The volume of funds expended; the registration data	The service will continuously update and revise procedures

**APPENDIX 2:**

**Work Plan**



## INDICATIVE WORK PLAN

### Outcome 1: Pest diagnostics service strengthened

Expected Output	Activities	Year 1												Year 2											
		J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D
1.1 Central Plant Quarantine laboratory equipped	1.1.1 Develop a plan for modernizing the phytosanitary diagnostic service																								
	1.1.2. Equipment purchase and installation and improvement of infrastructure																								
1.2 SPCS and relevant Customs Staff professionals trained in the field of laboratory diagnostics	1.2.1 Conduct training needs assessment, prioritize training, identify local and external sources of training																								
	1.2.2 Conduct training of 20 SPCS and 10 Customs inspectors in phytosanitary inspection and basic pest diagnostic																								
1.3. Standard documented operational procedures for laboratories including sampling and diagnostic protocols developed	1.3.1 Identify the diagnostic protocols needed																								
	1.3.2 Identify mechanism for collaboration by local institutes for the development of diagnostic protocols																								
	1.3.3 Develop documented standard operational procedures for laboratories and diagnostic protocols with assistance of internal and external experts																								
1.4. Create a collection of reference samples required for phytosanitary diagnostics	1.4.1 Prioritize the area where good biological and information reference materials are needed																								
	1.4.2 Identify local and international institutes with biological reference materials and get a copy of catalogue																								
	1.4.3 Purchase of reference materials and equipment and establish the collection																								
1.5. Develop strategic plan for improvement of diagnostics	1.5.1 Training in strategic planning and management of 5 senior technical staff of pest diagnostic service																								
	1.5.2 Development of a strategic plan for diagnostic service																								

**Outcome 2: To improve management of import regulatory system**

Expected Output	Activities	Year 1												Year 2											
		J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D
2.1 Capacity for inspection and pest risk reduction improved at border points	2.1.1 SPCS to propose to customs several options for re-establishing import inspection at or near border points																								
2.2 Priority procedures written and distributed	2.2.1 Develop documented and standard operating procedures for national import regulation system with assistance of internal and external experts																								
2.3 SPCS and customs inspectors trained in inspection and basic pest diagnostics	2.3.1 Conduct training needs assessment, priorities training, identify local and external sources of training																								
	2.3.2 Conduct training of 20 SPCS inspectors and 10 Customs inspectors over 2 years in system of import regulations																								
2.4. SPCS staff language and management skills improved	2.4.1 Prioritise the needed equipment and include their purchase in the STDF project																								
	2.4.2 Equipment purchase and installation and improvement of infrastructure																								

**Outcome 3: To improve pre-border inspection and export certification system in Azerbaijan**

Expected Output	Activities	Year 1												Year 2											
		J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D
3.1 SPCS inspectors trained in inspection and basic pest diagnostics	3.1.1 Conduct training needs assessment, priorities training, identify local and external sources of training																								
	3.1.2 Conduct training of 80 inspectors over 2 years in system of export certification																								
3.2 Computerized database on import requirements of importing countries created	3.2.1 Designate a responsible expert who will participate in the establishment and subsequently manage a computerized database																								
	3.2.2 Identify experts, and cost that will develop the computerized database																								
	3.2.3 Develop and install this database and train SPCS staff to use it																								
3.3 The necessary documented procedures for export certification developed	3.3.1 Develop documented and standard operational procedures for export certification system with assistance of internal and external experts																								

### APPENDIX 3: Provisional List of Scientific Supplies

The list below is indicative and is subject to adjustment based on:

- a. local needs at project inception
- b. Consultation with project and national experts
- c. Prevailing market prices and shipping costs for items that cannot be procured locally.

<b>BACTERIOLOGICAL AND FUNGAL DISEASES LABORATORIES</b>							
N.	Item	Technical specifications	Unit	Quantity	Unit price (€)	Total	Total USD
1	Vertical Laboratory steam sterilizer	Chamber volume: 40 liters, Capacity : 10x1 liter bottles, Stainless steel chamber, Sterilization temperatures : 105°C / 135°C, Sterilization loads: Liquid and solid, 5 present programs : 2 programs for liquid , 3 programs for solid, 2 custom made programs for liquid and solid, 1 melting program: 60°C / 100°C, Programmable pre-heating : 40°C / 60°C, Easy to use microprocessor control system, 128x64 pixels LCD display, Delayed start function, Memory for last 25 cycles, RS 232 port for printer / PC / SD card writer, Portable temperature sensor, Quick air-cooling system, Fractionated exhaust system, Comprehensive self-diagnostic system, Safety valve, Two baskets, Chamber Dims. Ø 320 x 500 mm, Ext.Dims. ( W x D x H ) : 590 x 540 x 990 mm, 230 V - 50/60 Hz	1	1	5000	5000	3675
2	Vortex mixer	Speed range 0-3000 rpm, with standard head	1	1	40	40	29.4
3	Petri dishes	Polystyrene sterile, (100 x 15 mm)	Pack of 500	6	150	900	661.5
4	Petri dishes	Polystyrene sterile, (55 x 15 mm)	Pack of 500	4	50	200	147
5	Pyrex 250 ml media bottles	Autoclavable, borosilicate glass, protective PVC coating, capacity	Case of 4	2	102	204	149.94

		250ml, 64 x 143 mm (d x h), autoclavable plug-seal caps and dip-free clear polypropylene pouring rings					
6	Pyrex 500 ml media bottles	Autoclavable, borosilicate glass, protective PVC coating, capacity 500ml, 86 x 176 mm (d x h), autoclavable plug-seal caps and dip-free clear polypropylene pouring rings	Case of 4	2	130	260	191.1
7	Pyrex 1000 ml media bottles	Autoclavable, borosilicate glass, protective PVC coating, capacity 1000ml, 101 x 225 mm (d x h), autoclavable plug-seal caps and dip-free clear polypropylene pouring rings	Case of 4	2	160	320	235.2
8	Biohazard Autoclave Bags	Polypropylene bags, 36 x 48 cm (W x L)	Pack of 200	1	145	145	106.575
9	Bacteriological needles	Transfer lanceolate microbiological needle, reusable, nichrome	Pack of 10	1	15	15	11.025
10	Vinyl gloves XL	Medical grade, 100% latex-free vinyl, non-sterile, single use, powder-free, size X-large, color white	Pack of 100	6	13	78	57.33
11	Autoclave indicator tape	Size W x L 1.9cm x 55.4m, Tape gives visual indication that the pack has passed through a steam sterilization cycle.	1	10	5	50	36.75
12	Microscope Slide	High purity, corrosion resistant water – white glassm ground edges, size = 76 x 26 mm	box	5	7	35	25.725
13	Micro Cover Glasses	Size = 22x 22 mm	Box of 100	5	4	20	14.7
14	Surgical blades	sterile, carbon steel, in metal foil vpi protected, 11,BS 2982, 100 oackets single peel pack.	box	10	10	100	73.5
15	Inoculating loops	Plastic sterile,blue , 10microliter>, 10 per bag	10 per bag	50	0.5	25	18.375
16	Filter paper	Whatman paper 90mm	box	15	7	105	77.175
17	Parafilm	4*38 meter 125F	box	1	20	20	14.7
18	Dimethylsulfoxide	DMSO (chemicals), 1L	1L bottle	1	60	60	44.1
19	Tryptone	Tryptone powder 500g	1	1	65	65	47.775

20	Sodium Chloride	NaCl pure, 1 kg	1	1	30	30	22.05
21	Agar King B	Agar King B, 500 g	1	2	70	140	102.9
22	Hymexazol	C <sub>4</sub> H <sub>5</sub> NO <sub>2</sub> , - pure, 50 mg (Biochemical Reagents)	1	2	62	124	91.14
23	Pentachloronitrobenzene	PCNB (chemicals), formula C <sub>6</sub> Cl <sub>5</sub> NO <sub>2</sub> , 5g	1	1	12	12	8.82
24	Nystatin	5 mu (Biochemicals / antibiotics)	1	1	60	60	44.1
25	Malt extract	Microbial Media , 500 g	1	6	130	780	573.3
26	Potato dextrose agar	Microbiology media, 500 g	1	6	65	390	286.65
27	Nutrient Agar	Microbiology media, 500 g	1	2	90	180	132.3
28	Agar	Microbiology media, 500 g	1	6	75	450	330.75
29	Iodine	Iodine powder	250g	1	38.5	38.5	28.2975
30	Trypan blue	Microbiology, 25 g	25g	1	34.6	34.6	25.431
31	Blue methylene		100g	1	26.9	26.9	19.7715
32	Lactic acid		500ml	2	19.2	38.5	28.2975
33	Glycerol		1L	1	11.5	11.5	8.4525
34	Ethanol 90%		20L	1	61.5	61.5	45.2025
35	Clorox		20L	2	7.7	15.4	11.319
<b>Sub-Total: Bacteriological and fungal diseases laboratories</b>						<b>10034.9</b>	<b>7375.6515</b>
<b>INSECT IDENTIFICATION</b>							
Number	Item	technical Specifications	unit	Quantity	Unit Price	Total Price	Total USD
					(EU)	(EU)	
1	Clippers	For cutting	1	6	25	150	110.25
2	Hand lens magnifier	10 X, Lens swings into housing for safe storage.	1	5	20	100	73.5
3	Microscope Slide	High purity, corrosion resistant water – white glassm ground edges, size = 76 x 26 mm	box	5	7	35	25.725
4	Micro Cover Glasses	Size = 16 x 16 mm	box	5	4	20	14.7
5	Micro Cover Glasses	Size = 18 x 18 mm	box	5	4	20	14.7
6	Slides Box	Box to store slides, polystyrene. Dust free storage. rust-resistant nickel-plated clasp and hinge pin. each slot is numbered to correspond to the slide inventory sheet Capacity = 50 slides (76 x 26 mm)	box	10	14	140	102.9

7	Insect Storage Box	To store specimen of insect. with pinning board and Glass frame cover with hermetic seal Size: at least 19 x 26 x 5.5 cm	box	10	80	800	588
8	Insect Storage Cabinet	To store boxes		10	800	8000	5880
9	Fushin Acid	Colorant for slide preparation	25 g	1	145	145	106.575
10	Inspection kits	Assorted items	Kit	20	350	7000	5145
11	Acetic acid	Slide preparation	500 ml	2	50	100	73.5
12	Toluene	Slide preparation	1 L	1	60	60	44.1
13	Ethanol pure	Slide preparation	Gallon	2	100	200	147
15	Gloves	Latex, small size	box	10	5	50	36.75
16	Gloves	Latex, Medium size	box	10	5	50	36.75
17	Sterile tubes	Glass; 10ml; with lid	Tube	300	40	1200	882
<b>Sub-Total: INSECT IDENTIFICATION</b>						<b>18070</b>	<b>13281.45</b>
<b>NEMATODE IDENTIFICATION</b>							
Number	Item	Technical Specifications	unit	Quantity	Unit Price	Total Price	Total USD
					(EU)		
1	Cellule de numeration Fuchs Rosenthal	reseau double profondeur de champs 0.2mm	1	1	35	35	25.725
2	Cellule de numeration Burker	reseau double profondeur de champs 0.1mm	1	1	35	35	25.725
3	20-mesh sieve	20-mesh sieve (833 micro-m aperture)	1	1	150	150	110.25
4	60-mesh sieve		1	1	150	150	110.25
5	200-mesh sieve	200 mesh sieve (74micro-m aperture)	1	1	150	150	110.25
6	325-mesh sieve	325 mesh sieve (43micro-m aperture)	1	1	150	150	110.25
7	400-mesh sieve		1	1	170	170	124.95
8	Ethanol 95%	AC 61511-0010	1 l	2	48	96	70.56
9	Acetic Acid Glacial	A065-500 PTFE	500 ml	1	399	399	293.265
10	Glycerol	G 33-1 Amberglass	1 l	1	158	158	116.13
11	Formaldehyde 40%	F 77 P-4 Polybottle	4 l	1	128	128	94.08
12	Clorox		20L	2	7.7	15.4	11.319
13	Ethanol pure		Gallon	2	100	200	147
14	Gloves	Latex, medium size	box	10	5	50	36.75
15	Sigma Cat # G2N70	GenElute™ Plant Genomic DNA Miniprep Kit - sufficient for 70 purifications	1 kit	1	150	150	110.25
16	Sigma Cat # R2523	REDTaq® ReadyMix™ PCR Reaction Mix	100RXN	1	50	50	36.75
17	sigma	Primers: desalted, scale: 0.025 µmole	1base	1	1.7	1.7	1.2495

18	Filter tips						0
19	Sigma Cat # P1473	PCR 100 bp Low Ladder - buffered aqueous solution	1VL	1	80	80	58.8
20	Sigma Cat # D3687	DirectLoad™ PCR 100 bp Low Ladder - aqueous glycerol solution with orange G and xylene cyanol	1VL	1	145	145	106.575
21	Sigma Cat # Z662585	BILATEC PCR tubes - volume 0.2 mL, flat cap	1000EA	1	60	60	44.1
22	Sigma Cat # Z662569	BILATEC PCR tubes - volume 0.5 mL, flat cap	1000EA	1	54	54	39.69
23	Sigma Cat # A 9539	Agarose - For routine use	500g	1	360	360	264.6
24	Short rapid primers			1	178	178	130.83
25	Esterase			1	130	130	95.55
26	Fast blue RR salt (Naphthol-AS-MX-Phosphate)	250mg		1	145	145	106.575
27	1-Naphtyl acetate	10g		1	145	145	106.575
28	2-Naphtyl acetate	5g		1	135	135	99.225
29	2-Naphtyl acetate	5g		1	143	143	105.105
30	1L Tris buffer	PH 7.5, 1M MB grade		1	136	136	99.96
31	Tris buffer	500g 99.9% -		1	142	142	104.37
32	TEMED -	500ml		1	156	156	114.66
33	Bis acrylamide	100g		1	137	137	100.695
34	Acrylamide AR	100g		1	136	136	99.96
35	α naphtyl acetate-	5grs		1	139	139	102.165
36	- β naphtyl acetate –	5grs		1	139	139	102.165
37	- β naphtyl acetate –	5grs		1	139	139	102.165
38	α naphtyl butyrate-	1gr		1	145	145	106.575
39	Acrylamide/bis	acrylamide 30% solution,29 :1		1	113	113	83.055
40	Tris HCl,	pH 6.8		1	149	149	109.515
41	SDS	For molecular biology,10% in water-100ml		1	130	130	95.55
42	Ammonium persulfate	for Electrophoresis-100grs		1	136	136	99.96
43	sample buffer Laemmli	2X concentrate- 10VL		1	156	156	114.66
44	Core for soil sampling	X2		4	250	1000	735
45	Counting chamber	X2		1	247	247	181.545
46	Glass watch	With cover lid 20-30 glass		1	240	240	176.4
47	Petri-dishes-		1000	1	459	459	337.365
<b>Sub-Total: NEMATODE IDENTIFICATION</b>						<b>7562.1</b>	<b>5558.1435</b>
<b>REFERENCES</b>							



Number	Item	Technical Specifications	unit	Quantity	Unit Price	Total Price	Total USD
					(EU)		
1	Protection intégrée des fruits à Noyau	CTIFL. 2001 ISBN -2-8-7511-146-3	1	2	45	90	66.15
2	Aphids on the world's crops. An identification and information Guide. Second edition.	R.L. Blackman & V.F. Eastop – Willey. 2000 ISBN 0-471-85191-4	1	1	370	370	271.95
3	Compendium of stone fruit diseases	J.M. Ogawa, E.I. Zehr, G.W. Bird, D.F. Ritchie, K. Uriu, J.K. Uyemoto. APS press. 1995 ISBN 0-89054-248-1	1	2	40	80	58.8
4	Compendium of citrus diseases. Second edition.	L.W. Timmer, S.M. Garnsey, J.H. Gradam. APS Press. 2000 ISBN – 0-89054-248-1	1	2	40	80	58.8
5	Illustrated genera of imperfect fungi – Fourth edition	H.L. Barnett and B.B. Hunter –APS press 1998 ISBN 978-0-89054-1920	1	1	30	30	22.05
6	Phytophthora: Identifying species by morphology and DNA fingerprints	M.E. Gallegly and C. Hong – APS press 2008 ISBN 978-0-89054-364-1	1	2	60	120	88.2
7	Methods for the diagnosis of bacterial diseases of plants (Methods in plant pathology)	R.A. Lelliot, D.E. Stead – Blackwell Science ISBN 10-0632012331	1	2	40	80	58.8
8	Diseases of fruits and vegetables. Diagnosis and management	Volume 1-2 S. Naqvi – Springer 2004 –	1	1	300 + 380	680	499.8
9	Diagnosing Plant Diseases Caused by Nematodes	Book. Malcolm C. Shurtleff & Charles W. Averre ISBN 9780890542545	1	1	42	42	30.87
10	Manual of Agricultural Nematology	Nickle, W.R., Marcel Dekker, New York (1991). ISBN 9780824783976	1	1	245	245	180.075
11	Integrated Management of Fruit Crops and Forest Nematodes	Aurelio Ciancio. ISBN 13-9781402098574	1	1	20	20	14.7
12	Experiments on the Control of the Root-Knot Nematode	James Albertine McClintock ISBN 10-1154457273	1	1	10	10	7.35
13	<a href="#">Root-knot Nematodes (Cabi)</a>	Roland N Perry, Maurice Moens and James L Starr ISBN 10-184593492X	1	1	135	135	99.225
14	Plant Parasitic Nematodes in Subtropical and Tropical Agriculture	Michel Luc & John Bridge ISBN 10-0851947279	1	1	230	230	169.05

15	Fungal Biodiversity	Edited by P.W. Crous, G.J.M. Verkley, J.Z. Groenewald and R.A. Samson, 2009; 12 <sup>2</sup> x 9 <sup>2</sup> spiral-bound hardcover, 269 pages; 168 figures; 4 pounds; Item No. 51779; Published by APS PRESS	1	2	90	180	132.3
16	Pictorial Atlas of Soil and Seed Fungi Morphologies of Cultured Fungi and Key to Species, Third Edition	By Tsuneo Watanabe, 2010; 8.5 <sup>2</sup> x 11 <sup>2</sup> hardcover; 396 pages; 850 images; 2 pounds; Item No. 04193; Published by APS PRESS	1	2	170	340	249.9
17	Laboratory methods for work with plant and soil nematodes	J. F. Sourthey Stationery office books Revised edition October 1986- 202 pages ISBN-10: 0112427545 ISBN 13: 978- 0112427544	1	1	55	55	40.425
18	Cell Biology of Plant Nematode Parasitism	<a href="#">Series: Plant Cell Monographs, Vol. 15</a> Berg, R. Howard; Taylor, Chris (Eds.) 2009, XIV, 274 p. 55 illus., 8 in color. <b>Hardcover</b> , ISBN 978-3-540-85213-1	1	1	115	115	84.525
<b>Sub-Total: REFERENCES</b>						<b>2902</b>	<b>2132.97</b>
<b>VIRAL DISEASES DETECTION</b>							
Number	Item	Technical specifications	Unit	Quantity	Unit Price euro	Total euro	Total USD
1	ELISA kit for Plum Pox virus (PPV)	ELISA kit for Plum Pox Virus (PPV) for stone fruits for 500 samples (LOEWE)	Kit	2 kits: for 1000 samples	400	800	588
2	ELISA kit for Prunus necrotic ring spot virus (PNRSV)	ELISA Kit for Prunus necrotic ring spot Virus (PNRSV) for stone fruits for 500 samples (IgG and IgG conjugated) (LOEWE)	Kit	2 kits: for 1000 samples	400	800	588
3	IgG conjugated only Loewe to complete our kit for Apple chlorotic Leaf spot virus (ACLSV)	IgG conjugated only Loewe to complete our kit for Apple chlorotic Leaf spot virus (ACLSV) for 500 samples (LOEWE)	Small tube	IgG conjugated only Loewe for 1000 samples	200	400	294
4	ELISA kit for Apple chlorotic Leaf spot virus (ACLSV)	ELISA Kit for Apple chlorotic Leaf spot virus (ACLSV) for stone fruits/pome fruits for 500 samples (IgG and IgG conjugated) (LOEWE)	Kit	1 kit: for 500 samples	400	400	294

5	ELISA kit for Apple mosaic virus (ApMV)	ELISA Kit for Apple mosaic virus (ApMV) for stone fruits/pome fruits for 500 samples (IgG and IgG conjugated) (LOEWE)	Kit	2 kits: for 1000 samples	400	800	588
6	IgG conjugated only Loewe to complete our kit for Apple mosaic virus (ApMV)	IgG conjugated only Loewe to complete our kit for Apple mosaic virus (ApMV) for 500 samples (LOEWE)	Small tube	IgG conjugated only Loewe for 500 samples	200	200	147
7	ELISA kit for Prune dwarf virus (PDV)	ELISA Kit for Prune dwarf virus (PDV) for stone fruits for 500 samples (IgG and IgG conjugated) (LOEWE)	Kit	2 kits: for 1000 samples	400	800	588
8	ELISA kit for Cherry leaf roll virus (CLRV)	ELISA Kit for Cherry leaf roll virus (CLRV) for stone fruits for 500 samples (IgG and IgG conjugated) (LOEWE)	Kit	2 kits: for 1000 samples	400	800	588
9	ELISA kit for Tomato ring spot virus (TomRSV)	ELISA Kit for Tomato ring spot virus (TomRSV) for stone fruits for 500 samples (IgG and IgG conjugated) (LOEWE)	Kit	2 kits: for 1000 samples	400	800	588
10	ELISA kit for Strawberry latent ring spot virus (SLRV)	ELISA Kit for latent ring spot virus (SLRV) for stone fruits for 500 samples (IgG and IgG conjugated) (LOEWE)	Kit	2 kits: for 1000 samples	400	800	588
11	ELISA kit for Raspberry ring spot virus (RRSV)	ELISA Kit Raspberry ring spot virus (RRSV) for stone fruits for 500 samples (IgG and IgG conjugated) (LOEWE)	Kit	2 kits: for 1000 samples	400	800	588
12	ELISA kit for Citrus Tristeza virus	ELISA Kit for Citrus Tristeza virus for citrus for 500 samples (IgG and IgG conjugated)	Kit	2 kits: for 1000 samples	400	800	588
13	ELISA kit for Psorosis virus	ELISA Kit for Psorosis virus for citrus for 500 samples (IgG and IgG conjugated)	Kit	2 kits: for 1000 samples	400	800	588
14	4- Nitrophenyl phosphate Na <sub>2</sub> -salt	4- Nitrophenyl phosphate Na <sub>2</sub> -salt analytical grade Substrate for alkaline phosphate Mr 371.15 C <sub>6</sub> H <sub>4</sub> NO <sub>6</sub> Na <sub>2</sub> 6H <sub>2</sub> O (25 g)	Bottle	1 bottle	90	90	66.15
15	Flexible plate 96 well, U-Bottom without Lid	Flexible plate 96 well, U-Bottom without Lid Non-Tissue Culture Treated, Nonsterile, Polyvinyl Chloride <b>25/dispenser pack</b>	Packs	10 packs (250 Flexible plates)	50	500	367.5
16	Yellow tips 20-200 µl	Yellow tips 20-200 µl (1000 tips/bag)	Bag	20000 tips (1000 tips/bag)	10	200	147

17	Ethanol absolute	Ethanol absolute to be used for RNA/DNA precipitation and washing during Total nucleic acid extraction and DNA extraction (1 liter/bottle)	Bottle	2 bottles: 1 liter/bottle	80	160	117.6
18	IQ™ Supermix, 1.25 ml (BIO-RAD)	IQ™ Supermix, 1.25 ml To Recorder 100 x 50 µl rxs: 170-8860 To Recorder 500 x 50 µl rxs: 170-8862 BIO-RAD	Tube	2 tubes (each tube 1.25 ml)	300	600	441
19	Sigma FAST BCIP/NBT	Sigma FAST BCIP/NBT B5655-25 TAB	Box	125 TAB (25 Tablets/box)	125	1750	1286.25
20	BIOREBA Extraction Bags “Universal”	BIOREBA Art. No. 430100 Extraction Bags “Universal” (special for BIOREBA extraction machine that we have)	Unit	1500 bags (100 bags/Unit)	60	900	661.5
21	Positive control for CLRV	Positive control for Cherry leaf roll virus (CLRV)	Bottle	3 Positive controls for CLRV	40	80	58.8
22	Positive control for RpRsV	Positive control for Raspberry ring spot virus (RpRsV)	Bottle	3 Positive controls for RpRsV	40	80	58.8
23	Positive control for PNRSV	Positive control for Prunus necrotic ring spot virus (PNRSV)	Bottle	3 Positive controls for PNRSV	40	80	58.8
24	Positive control for PDV	Positive control for Prune dwarf virus (PDV)	Bottle	3 Positive controls for PDV	40	80	58.8
25	Positive control for SLRSV	Positive control for Strawberry latent ring spot virus (SLRSV)	Bottle	3 Positive controls for SLRSV	40	80	58.8
26	Positive control for ToRSV	Positive control for Tomato ring spot virus (ToRSV)	Bottle	3 Positive controls for ToRSV	40	80	58.8
27	Positive control for ACLSV	Positive control for Apple chlorotic Leaf spot virus (ACLSV)	Bottle	3 Positive controls for ACLSV	40	80	58.8
28	Positive control for ApMV	Positive control for Apple mosaic virus (ApMV)	Bottle	3 Positive controls for ApMV	40	80	58.8
29	Positive control for PPV	Positive control for Plum Pox virus (PPV)	Bottle	3 Positive controls for PPV	40	80	58.8
30	Positive control for Citrus Tristeza virus (CTV)	Positive control for Citrus Tristeza virus (CTV)	Bottle	3 Positive controls for CTV	40	80	58.8
31	Positive control for Psorosis virus	Positive control for Psorosis virus for Citrus	Bottle	3 Positive controls for Psorosis virus	40	80	58.8
32	0.2 ml Thin –Wall Tubes for PCR	0.2 ml Thin –Wall Tubes for PCR with attached caps, autoclavable at 120°C	Bag	1 bag (1000 tubes/bag)	50	50	36.75

33	ELISA kit for American Plum Line Pattern Virus (APLPV)	ELISA Kit for American Plum Line Pattern Virus for cherry and plum for 500 samples (IgG and IgG conjugated)	Kit	2 kits: for 1000 samples	400	800	588
34	Positive control for American Plum Line Pattern Virus (APLPV)	Positive control for American Plum Line Pattern Virus for cherry and plum	Bottle	3 Positive controls for American Plum Line Pattern	400	1200	882
<b>Sub-Total: Viral diseases detection</b>						<b>16130</b>	<b>11855.55</b>
<b>SCIENTIFIC SUPPLIES TOTAL</b>						<b>54699</b>	<b>40203.765</b>

**APPENDIX 4:**

**Terms of Reference for key staff involved in project implementation**

## Terms of Reference

### Programme Management Unit (PMU)

The PMU will work under the technical supervision of the Secretary of the International Plant Protection Convention (IPPC), in close collaboration with the SPCS, other project experts and with the World Bank ACIP PMU. The PMU will perform the following tasks:

1. Assume responsibility for the day to day management of the project;
2. Coordinate the activities of the project consultants and project personnel;
3. Prepare a detailed project work plan, budget, procurement plan and establishment of milestones in conjunction with the Implementation Officer of the IPPC;
4. Monitor progress according to approved work plan;
5. Assist in the preparation of the various technical resources envisioned as products of the project;
6. Organize the logistics of all activities of the project;
7. Collect and make available to the consultants and other project resources relevant documents and information as needed; and
8. Prepare progress reports of project activities, final project report and contribute to the preparation of the draft terminal statement.

Duty station: Baku, Azerbaijan

## Terms of Reference

### IPPC Technical Supervisory Services

Under the general supervision of the Secretary of the International Plant Protection Convention and in close collaboration with the PMU and other project Staff, the IPPC will perform the following Project Oversight Tasks:

1. Make recommendations on the mode of implementation of the project in consultation with the PMU.
2. Make strategic decisions in respect of the project work plan, budget, procurement plan and milestones to ensure best use of project resources, avoid project slippage and take midterm corrective action as the case necessitates.
3. Provide technical clearance of project personnel ToRs, and reports.
4. Assess project progress at regular intervals and meet with relevant stakeholders to address project technical implementation bottlenecks.

Duty station: Rome, Italy.



## Terms of Reference

### International Phytosanitary Consultant – Pest Diagnostics

The consultant will work under the technical supervision of the Secretary of the International Plant Protection Convention (IPPC), in close collaboration with the PMU, SPCS and other project experts. The Consultant will perform the following tasks:

1. Review training needs assessment and prepare a list of staff of the SPC and Customs requiring training
2. Identify local and external sources of training and make recommendations for training based on the training assessment
3. Review the operations of the laboratories in the country
4. Conduct a review of existing diagnostic protocols and identify those that need to be developed
5. Together with the diagnostic staff develop documented standard operational procedures for laboratories
6. Together with the diagnostic staff develop key diagnostic protocols
7. Develop a training programme for diagnostics including hand outs
8. Procure equipment and materials to improve the key technical aspects of the central diagnostic facility and key points of entry and pre-border posts.
9. Conduct training of 20 SPCS and 10 Customs inspectors in key pest diagnostic techniques
10. Based on the review of operations of diagnostic laboratories countrywide, prioritize the area where good biological and information reference materials are needed.
11. Review and update the list of references and procure as needed.
12. Develop a plan for establishment of a national reference biological collection in the Central SPC laboratory
13. Identify local and international institutes with biological reference materials and initiate procurement of biological samples and reference materials
14. Finalise specifications for purchase of reference materials and equipment and
15. Initiate establishment of the collection based on specimens processed at all phytosanitary laboratories countrywide from phytosanitary programmes such as surveillance, eradication, import inspection and export certification.

#### Qualifications

The candidate should have an advanced university degree in bio-systematics with at least seven years of experience in plant pest diagnostics and biological reference collections. Excellent knowledge of English is essential and working knowledge of Russian is desirable. Initiative, judgment, organizational ability and a good sense of teamwork and human relations are required.

Duty Station: Baku, Azerbaijan with in-country travel as needed

## Terms of Reference

### National Phytosanitary Consultant – Pest Diagnostics

The consultant will work under the technical supervision of the International Phytosanitary Consultant – Pest Diagnostics and in close collaboration with the PMU, SPCS and other project experts. The Consultant will perform the following tasks:

1. Assist in the conduct of the training needs assessment
2. Assist in the identification of local and regional sources of training
3. Provide support for the review of the operations of the laboratories in the country
4. Prepare a collection of existing diagnostic protocols
5. Assist with the development of documented standard operational procedures for laboratories and key diagnostic protocols
6. Assist with organization and logistics of the training programme for diagnostics
7. Collect relevant references for development of a national biological reference facility
8. Assist to identify local and regional institutes with biological reference materials and initiate procurement of biological samples and reference materials
9. Assist with the establishment of the collection based on specimens processed at all phytosanitary laboratories countrywide from phytosanitary programmes such as surveillance, eradication, import inspection and export certification.

#### Qualifications

The candidate should have an advanced university degree in bio-systematics with at least five years of experience in plant pest diagnostics. Excellent knowledge of English is essential and working knowledge of Russian is desirable. Initiative, judgment, organizational ability and a good sense of teamwork and human relations are required.

Duty Station: Baku, Azerbaijan with in-country travel as needed

## Terms of Reference

### International Phytosanitary Consultant – Import and Export Regulatory Management

The consultant will work under the technical supervision of the Secretary of the International Plant Protection Convention (IPPC), in close collaboration with the PMU, SPCS, the International Consultant of Pest Diagnosis and other project experts. The Consultant will perform the following tasks:

#### Import regulatory actions:

1. Review the operations of the import unit within the SPC and at border and pre-border points.
2. Prepare training needs assessment and recommend risk mitigation actions at the entry points
3. Prepare a list of required documented procedures based on an analysis of the various points of entry.
4. Initiate the development of key documented and standard operating procedures for the national import regulation system with assistance of relevant SPC staff
5. Develop a training programme for import regulatory management including hand outs and manuals as necessary
6. Conduct training of 20 SPCS inspectors and 10 Customs inspectors on the various aspect of the management of the import system based on relevant ISPMs
7. Supplement the national training by identifying local staff for additional training at regional or international levels

#### Export Certification:

1. Review the operations of the export certification activities of the SPC within the country.
2. Prepare training needs assessment and recommend concrete actions for improvement
3. Prepare a list of required documented procedures based on an analysis of the system and the results of the PCE.
4. Initiate the development of key documented and standard operating procedures for the national import regulation system with assistance of relevant SPC staff
5. Develop a training programme for export certification including hand outs and manuals as necessary
6. Conduct training of 80 SPCS field inspectors on the various aspect of the management of the export certification system based on relevant ISPMs
7. Conduct a pest surveillance activity for one crop of export value and pest through one growing season. The activity must be done in full compliance with ISPM6, 4 and 8 and others as relevant
8. Ensure samples of pests detected are diagnosed using the SPC facilities
9. Supplement the national training by identifying local staff for additional training at regional or international levels

#### Management

1. Prepare training needs assessment and recommend concrete actions for improvement of the capacity of the SPC staff to function in the international phytosanitary trade environment
2. Review the language training programmes in the country or the region and design a training plan to obtain maximum impact for the technical staff of the SPC.
3. Review management focussed training programmes in the country or the region and design a training plan to obtain maximum impact for the technical staff of the SPC.

#### Qualifications

The candidate should have an advanced university degree in crop protection or related agricultural sciences with at least seven years of experience in the management of import and export systems from the regulatory standpoint. Excellent knowledge of English is essential and working knowledge of Russian is desirable. Initiative, judgment, organizational ability and a good sense of teamwork and human relations are required.

Duty Station: Baku, Azerbaijan with in-country travel as needed

## Terms of Reference

### National Phytosanitary Consultant – Import and Export Regulatory Management

The consultant will work under the technical supervision of the International Phytosanitary Consultant – Import and Export Regulatory Management and in close collaboration with the PMU, SPCS, the International Consultant of Pest Diagnosis and other project experts. The Consultant will perform the following tasks:

#### Import regulatory actions:

1. Assist in the review of the operations of the import unit within the SPC and at border and pre-border points.
2. Assist with the conduct of the training needs assessment
3. Compile relevant documentation on existing documented procedures at the SPC and Customs.
4. Participate in the development of key documented and standard operating procedures for the national import regulation system with assistance of relevant SPC staff
5. Assist with the preparations for and the logistics of the training programme for import regulatory management including hand outs and manuals as necessary

#### Export Certification:

1. Assist in the review the operations of the export certification activities of the SPC within the country.
2. Assist with the conduct of the needs assessment
3. Compile relevant documentation on existing documented procedures where relevant.
4. Participate in the development of key documented and standard operating procedures for the national import regulation system with assistance of relevant SPC staff
5. Assist with the preparations for and the logistics of training programme for export certification including hand outs and manuals as necessary
6. Support the International consultant on the training of 80 SPCS field inspectors on the various aspects of the management of the export certification system based on relevant ISPMs
7. Assist with the planning and execution of the pest surveillance activity for one crop of export value and pest through one growing season. The activity must be done in full compliance with ISPM6, 4 and 8 and others as relevant
8. Facilitate the sampling, delivery, diagnosis and reporting of pests detected in the pest surveillance exercise

#### Qualifications

The candidate should have an advanced university degree in crop protection or related agricultural sciences with some experience in extension services particularly for programmes with an exportation orientation. Excellent knowledge of English is essential and working knowledge of Russian is desirable. Initiative, judgment, organizational ability and a good sense of teamwork and human relations are required.

Duty Station: Baku, Azerbaijan with in-country travel as needed

## Contract

### Phytosanitary Information System

#### Background

There is a need to expand the current SPCS/Customs software which is focused on imports to cover other phytosanitary information such as sampling, diagnosis, certification for export, Pest Risk Analysis, and others. There is model software existing from 2004-6 which was never fully deployed in Azerbaijan due to its reliance on external support. The current contract seeks to have a home grown version of the software developed along similar lines so that it can be readily maintained within Azerbaijan.

#### Duration

The system will be developed over an 8 month period and installation and training will occur subsequently. There will be a counterpart from the SPC who will work alongside the IT Company to ensure that the software is fit for purpose.

#### Outline of duties

- A. Review previous software for management of the phytosanitary software
- B. Select and appropriate programming language giving due consideration for future upgrades and compatibility
- C. Conduct a needs assessment and a thorough review of the forms and other documentation in use.
- D. Design an appropriate database structure and design the software interface
- E. Analyse the electronic communication infrastructure throughout the country where the SPC operates and recommend hardware upgrades as necessary
- F. Install the software and test it
- G. Train SPCS staff to use it

Duty Station: Baku, Azerbaijan

## Contract

### Language Training

#### Background

There is a need to improve the capability of the current SPCS/Customs staff in terms of language to enable them to better function in the international phytosanitary trading environment. The lack of fluency in key international languages prevents the development of the services beyond the confines of the geographic boundaries of the country as Azeri is the main language. As a result the SPC is limited in the ability to fully participate in trade negotiations, discussion of cases of non-compliance concerning imports, communication with NPPO concerning trade matter and participation in international forum on phytosanitary issues and training. Not having language skills to communicate with other NPPOs is a serious impediment to the country in terms of market access and risk mitigation – particularly for the conduct of pest risk analysis which requires a high degree of fluency in UN Languages since most material of value in preparation of PRAs is in English French or Spanish languages.

#### Duration

The project aims to institute language courses for staff of the SPC, particularly technical staff and those at the SPC headquarters. These courses will span the two years of the project cycle.

#### Outline of duties:

- A. A firm or consultant will be engaged to provide training to SPCS technical and senior staff and Customs inspectors over 2 years in selected languages.
- B. At a minimum 3 group language courses (UN languages) will be offered
- C. Preferably the courses shall be scheduled during an appropriate time at the SPC headquarters during working hours and use examples from the daily activities of the staff in the course practical sessions.
- D. Certificates of accomplishment will be provided based on performance and the progress of staff will be regularly assessed.

Duty Station: Baku, Azerbaijan

## Contract

### Management Training

#### Background

The international trading environment involves constant interaction with a number of actors at various levels including policy, trade, diplomatic and technical. The main weakness identified by the PCE is the lack of strategic planning and management processes that take advantage of the skills available in the SPCS. In addition, the management styles are inherited from past administrations which tend to negate the need for participation of staff in strategic decisions of the NPPO. The project aims to introduce new skills for management and policy decision making which will hopefully lead to an improved structure and management of the SPCS.

#### Duration

The project aims to engage a firm or firms or experts to provide management focused training courses for staff of the SPC, particularly technical staff and those at the SPCS headquarters. These courses will occur at intervals during the two year project cycle.

#### Outline of duties:

- A. A firm or consultant will be engaged to provide training to SPCS technical and senior staff and Customs inspectors over 2 years as follows:
  - 1 Course for Senior Staff on Negotiations Skills
  - 1 Course for Senior Staff on Presentation Skills
  - 1 Course for Senior Staff on project management
  - Others as funds allow

Duty Station: Baku, Azerbaijan



**APPENDIX 5: Provisional Biological reference collection equipment and supplies list.**

**Not to exceed (USD 76 000.00).**

The list below is indicative and is subject to adjustment based on:

- a. local needs at project inception
- b. Consultation with project and national experts
- c. Prevailing market prices and shipping costs for items that cannot be procured locally.

<b>LABORATORY EQUIPMENT</b>			
<b>Item No.</b>	<b>Description</b>	<b>Qty</b>	<b>Specifications</b>
1a	Trinocular stereomicroscope, with boom stand	1	<ul style="list-style-type: none"> <li>• Specifications:</li> <li>• Microscope Body / Zoom Lens: Stereo Zoom Trinocular Microscope Body</li> <li>• Stand: Gliding Arm Boom Stand</li> <li>• Focus Mount: E-ARM</li> <li>• Illuminator: Fluorescent Ring Light</li> <li>• Eyepieces: 10X Eyepieces</li> <li>• Video Coupler: 0.4X Video CCD Coupler</li> <li>• Auxiliary Lens:</li> <li>• 0.5X Mag: 11.2x - 69.9x; FOV (mm): 49.97 - 7.99; WD (mm): 211</li> <li>• 1X Mag: 22.4x - 139.7x; FOV (mm): 24.98 - 3.99; WD (mm): 115</li> <li>• 2X Mag: 44.7x - 279.4x; FOV (mm): 12 - 2; WD (mm): 43.5</li> <li>• Power consumption: 220V</li> </ul>
1b	Digital microscope camera for the above stereoscope	2	<ul style="list-style-type: none"> <li>• <b>TECHNICAL SPECIFICATIONS</b></li> <li>• Sensor: CMOS; 1/2"</li> <li>• Pixel: 3 mega pixel (3.2 x 3.2 μm)</li> <li>• Resolution: 2048 x 1536</li> <li>• Interface/Power: USB 2.0</li> <li>• Frame rate :11 fps</li> <li>• Dynamic range: 61 dB S/N ratio 43 dB Sensitivity: 1.0V/lux.sec @ 550nm</li> <li>• Shutter: Manual/Auto (1~500ms), Field of Interest selectable</li> <li>• Color mode: User adjustable RGB color</li> <li>• Lens mount: C-Mount</li> <li>• Computer: Pentium 4 or better, XP or Vista, 1G RAM recommended</li> <li>• Software Image: capture software included</li> </ul>
2	Data loggers LCD Temp /RH	10	<ul style="list-style-type: none"> <li>• Logger Capabilities</li> <li>• Temp and RH: 21,500 measurements</li> <li>• Temp Only: 43,000 measurements</li> <li>• Software-selectable sampling intervals: 1 second up to 18 hours, recording times up to 1 year</li> <li>• Programmable start time/date</li> <li>• Recording modes: Stop when full</li> <li>• Launch Modes: Immediate, Delayed</li> <li>• Nonvolatile EEPROM memory retains data even if batteries fail</li> <li>• LCD</li> <li>• Size: 33 x 50.8 mm (1.3 x 2 inches)</li> <li>• Displays temperature and relative humidity simultaneously</li> <li>• Displays °C or °F (selectable within host software)</li> <li>• Displays memory remaining and battery level</li> <li>• Displays flashing ALERT for out-of-limits conditions (selectable within host software) and stops flashing on</li> </ul>

			<ul style="list-style-type: none"> <li>offload or return to normal range.</li> <li>Alarms</li> <li>High and low set points for both temperature and relative humidity</li> <li>Selectable delays for each set point.</li> <li>Alert conditions reset on offload or return to normal range.</li> <li>Selectable Contact Relay: Normally Closed or Normally Open</li> <li>Contact rating: 48VDC, 1A max</li> <li>Contact resistance: less than 1 Ohm</li> <li>Wire size range is 22AWG to 14AWG</li> <li>0% Low Battery Range Communications</li> <li>Offloads data to PC or U-Shuttle via USB cable</li> <li>Readout full logger (64K) in less than 30 seconds</li> <li>Internal 12-Bit Temperature Sensor</li> <li>Measurement range: -20°C to 50°C (-4°F to 122°F)</li> <li>Accuracy: 0.2°C over 0° to 50°C (0.36°F over 32° to 122°F), see plot A</li> <li>Resolution: 0.03% RH @ 25°C (77°F), see plot A</li> <li>Response time: 15 minutes (to 90% in airflow of 1 m/sec)</li> <li>Temperature Accuracy Drift: Negligible</li> <li>Internal 12-Bit Relative Humidity Sensor</li> <li>User replaceable</li> <li>Measurement range: 0-100% RH, -20 to 50°C (-4 to 122°F)</li> <li>±2.5% from 10% to 90% RH (typical), to a maximum of ±3.5%, see Plot B</li> <li>Resolution: 0.03% RH @ 25°C (77°F)</li> <li>Response time to 90%: 2 minutes (to 90% in airflow of 1 m/sec)</li> <li>Accuracy Drift: &lt;2% over 5 years typical</li> <li>Hysteresis: 1% typical</li> <li>Timekeeping</li> <li>Time accuracy: ±1 minute per month at 20°C (68°F).</li> <li>Power</li> <li>3 AAA Alkaline batteries, user-replaceable</li> <li>Size/Weight</li> <li>125 x 92 x 31 mm (4.9 x 3.6 x 1.2 inches)</li> <li>170 g (6.0 oz) with batteries</li> </ul>	
3	Analytical balance		<ul style="list-style-type: none"> <li>Capacity: 65g,</li> <li>Readability: 0.0001 g,</li> <li>Stabilization Time: 3 s,</li> <li>Pan Size: 90 mm</li> </ul>	
4	Digital incubator	1	<ul style="list-style-type: none"> <li>temperature tracking feature</li> <li>stores maximum process temperature deviation from set point in 0.1° units.</li> <li>Large, low-glare, four-digit LED</li> <li>Selectable readout in °C or °F with 1.0° or 0.1° resolution.</li> <li>High-grade aluminum interior</li> <li>Cold-rolled, powder-coated steel exterior with a bronze acrylic see-through door.</li> <li>Forced air convection unit uses a blower with side air plenum to deliver horizontal air flow within the chamber</li> <li>temperature uniformity of ±0.5°C.</li> <li>two adjustable aluminum shelves and spill tray.</li> <li>Dimensions: 9.4"H x 10.5"W x 12"D.</li> <li>Power supply: 220V AC.</li> </ul>	
5	Magnetic hotplate stirrer	1	<ul style="list-style-type: none"> <li>Temperature range: 38° - 371°C (100° to 700°F) (Stepless selection)</li> <li>Temperature accuracy: ±1°C</li> <li>PTR probe range: 0 to 200°C</li> <li>PTR probe accuracy: ±0.5°C</li> <li>Power: 500W</li> </ul>	

			<ul style="list-style-type: none"> <li>• top plate: Cast-aluminum or ceramic</li> <li>• Plate dimensions: 210 x 210mm</li> <li>• load max.: 10 lb. (4.5kg)</li> <li>• Heated area: 150 x 150mm</li> <li>• Stirrer speed: 0 to 2000rpm</li> <li>• Size: (w x d x h) 225 x 340 x 85</li> <li>• Weight: 4.2kg</li> <li>• Supplied with: Teflon* TFE-coated stirrer bar, temperature probe, probe holder and retort rod</li> <li>• Power consumption: 230V/50Hz</li> </ul>	
6	Headband magnifier	30	<ul style="list-style-type: none"> <li>• Working distance 14"</li> <li>• Magnification: 1-3/4X</li> </ul>	
7	Plastic magnifier pocket lens	300	<ul style="list-style-type: none"> <li>• Size: 3.25"X2.12"</li> <li>• Magnification: 3x</li> </ul>	
8	Heavy duty cutter with snap off blades – (MULTIPURPOSE UTILITY KNIFE)	30	<ul style="list-style-type: none"> <li>• Heavy-duty cutter with all-plastic handle and blade slide lock.</li> <li>• Blades type: Long lasting, durable snap-off blade. high quality carbon tool steel.</li> <li>• Size:0.5(L) x 18(W) x 100(H)mm(0.02 x 0.71 x 3.93 in)</li> <li>• 12 cutting edges per knife</li> </ul>	
9	Standard plant press (sets)	100	<ul style="list-style-type: none"> <li>• Dimensions: 12 x 18" (30.5 x 46 cm)</li> </ul>	
10	Steel Herbarium Cabinets	10	<ul style="list-style-type: none"> <li>• Materials: <ul style="list-style-type: none"> <li>○ 20 gauge cold rolled furniture quality steel</li> <li>○ Double panel, lift-off door with rigid chrome push plate located at exact area needed for pressure required to close air tight door</li> <li>○ 3-point locking handle &amp; two vertical lock rods to assure total contact and sealing of door</li> <li>○ Chrome label holder for standard 3 x 5 card</li> <li>○ Improved insect-proof tubular neoprene seal</li> </ul> </li> <li>• Dimensions: <ul style="list-style-type: none"> <li>○ 81-1/8" high, 29-5/32" wide, 18-25/32" deep, O.D. (74 x 48 cm);</li> <li>○ shipping weight: 285 pounds</li> </ul> </li> </ul>	

<b>LABORATORY SUPPLIES</b>				
1a	Micro slide, single cavity	10	<ul style="list-style-type: none"> <li>• research grade; non-corrosive glass; beveled corners; 76x25mm; 12/pk</li> </ul>	
1b	Micro slide, double cavity	10	<ul style="list-style-type: none"> <li>• research grade; non-corrosive glass; beveled corners; 76x25mm; 12/pk</li> </ul>	
1c	Micro slides	24	<ul style="list-style-type: none"> <li>• research grade; non-corrosive glass; beveled corners; 76x25mm; 12/pk</li> </ul>	
2a	Square cover slips	24	<ul style="list-style-type: none"> <li>• round; 15 mm; 1oz/pk</li> </ul>	
2b	Square cover slips	24	<ul style="list-style-type: none"> <li>• round; 18 mm; 1oz/pk</li> </ul>	
3a	Cover glass	24	<ul style="list-style-type: none"> <li>• square; 22 mm sq. no 1; 1oz/pk</li> </ul>	
3b	Cover glass	24	<ul style="list-style-type: none"> <li>• square; 22 mm sq. no 2; 1oz/pk</li> </ul>	
4a	Beakers	5	<ul style="list-style-type: none"> <li>• standard grade pyrex glass; 10ml</li> </ul>	
4b	Beakers	5	<ul style="list-style-type: none"> <li>• standard grade pyrex glass; 20ml</li> </ul>	
4c	Beakers	5	<ul style="list-style-type: none"> <li>• standard grade pyrex glass; 30ml</li> </ul>	
4d	Beakers	5	<ul style="list-style-type: none"> <li>• standard grade pyrex glass; 50ml</li> </ul>	
4e	Beakers	5	<ul style="list-style-type: none"> <li>• standard grade pyrex glass; 100ml</li> </ul>	
4f	Beakers	5	<ul style="list-style-type: none"> <li>• standard grade pyrex glass; 150ml</li> </ul>	
4g	Beakers	5	<ul style="list-style-type: none"> <li>• standard grade pyrex glass; 250ml</li> </ul>	
4h	Beakers	2	<ul style="list-style-type: none"> <li>• standard grade pyrex glass; 400ml</li> </ul>	
4i	Beakers	2	<ul style="list-style-type: none"> <li>• standard grade pyrex glass; 600ml</li> </ul>	
4j	Beakers	1	<ul style="list-style-type: none"> <li>• standard grade pyrex glass; 1000ml</li> </ul>	
4k	Beakers	1	<ul style="list-style-type: none"> <li>• standard grade pyrex glass; 1500ml</li> </ul>	
5a	Petri dishes	10	<ul style="list-style-type: none"> <li>• disposable 60x15</li> </ul>	
5b	Petri dishes	10	<ul style="list-style-type: none"> <li>• Pyrex glass 60x15</li> </ul>	
	Forceps (very fine point)	20	<ul style="list-style-type: none"> <li>• Sharp point</li> </ul>	

6a			<ul style="list-style-type: none"> <li>Stainless steel</li> <li>Length: 115mm (4 ½ ").</li> </ul>	
6b	Forceps (fine point) – 4.5"	20	<ul style="list-style-type: none"> <li>Sharp point</li> <li>Stainless steel</li> <li>Length: 121mm (4 ¾").</li> </ul>	
7	Heathrow Microscope slide storage rack	3	<ul style="list-style-type: none"> <li>Clear acrylic construction.</li> <li>Holds up to fifteen 25- or 100-Place Slide Boxes.</li> </ul>	
8	Microscope Slide Box	15	<ul style="list-style-type: none"> <li>Heavy-duty boxes</li> <li>Capacity: 100 place for standard 75 x 25mm slides.</li> <li>secured with rust-resistant nickel-plated clasps and hinge pins.</li> <li>slide inventory sheet on the inside cover.</li> </ul>	
9	Slide Drying Rack	3	<ul style="list-style-type: none"> <li>Capacity 30 slides</li> </ul>	
10	Plastic Dropping pipette	28	<ul style="list-style-type: none"> <li>Glass dropping pipette,</li> <li>with rubber bulb;</li> <li>4-1/2" (115mm).</li> </ul>	
11	Potassium Hydroxide	2	Specimen preservation	
12	Sodium Hydroxide	2	Specimen preservation	
13	Aceto orcein	2	Specimen preservation	
14	Acid Fuchsin	2	Specimen preservation	
15	Clove oil	2	Specimen preservation	
16	Canada Balsam	2	Specimen preservation	
17	Glacial Acetic Acid	2	Specimen preservation	
18	Hydrogen Chloride	2	Specimen preservation	
19	Xylene	2	Specimen preservation	
20	PVA mounting medium	5	Specimen preservation	
21	Euparal	1	Specimen preservation	
22	Euparal essence	1	Specimen preservation	
23	Lignin pink	4	Specimen preservation	

#### CONSUMER ELECTRONICS

1	Digital Camera for field use –	4	<p>Sensor</p> <ul style="list-style-type: none"> <li>1/1.8" Type CCD</li> <li>8.3 million pixels total</li> <li>8.0 million effective pixels Image sizes</li> </ul> <p>Image sizes</p> <ul style="list-style-type: none"> <li>3264 x 2448</li> <li>3248 x 2160</li> <li>2560 x 1920</li> <li>2048 x 1536</li> <li>1600 x 1200</li> <li>1280 x 960</li> </ul> <p>Movie clips</p> <ul style="list-style-type: none"> <li>640 x 480 / 320 x 240</li> <li>30 / 10 fps</li> </ul> <p>Lens</p> <ul style="list-style-type: none"> <li>35 - 420 mm equiv. (12x zoom)</li> <li>F2.8 - F3.7</li> <li>55 mm lens thread</li> </ul> <p>Focus</p> <ul style="list-style-type: none"> <li>1 point</li> <li>1 point high-speed</li> <li>3 point high-speed</li> <li>9 point</li> <li>Spot</li> <li>5cm macro mode (Wide), 200cm (Tele)</li> <li>AF assist lamp</li> </ul>	
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			<p>Sensitivity</p> <ul style="list-style-type: none"> <li>• Auto</li> <li>• ISO 80, 100, 200, 400</li> </ul> <p>Shutter speed</p> <ul style="list-style-type: none"> <li>• All modes except Manual: 8 - 1/2000 sec</li> <li>• Manual mode: 60 - 1/2000 sec</li> </ul> <p>Aperture</p> <ul style="list-style-type: none"> <li>• Wide: F2.8 - F11</li> <li>• Tele: F3.7 - F11</li> </ul> <p>Metering</p> <ul style="list-style-type: none"> <li>• Intelligent Multiple</li> <li>• Center weighted</li> <li>• Spot White Balance</li> <li>• Auto</li> <li>• Daylight, cloudy, halogen, flash, white set</li> <li>• 2x Custom WB (manual)</li> <li>• White Balance fine tune (R-B)</li> </ul> <p>Storage</p> <ul style="list-style-type: none"> <li>• SD/MMC</li> <li>• 32 MB SD supplied*</li> </ul> <p>Viewfinder</p> <ul style="list-style-type: none"> <li>• EVF (230,000 pixels), 0.44-inch</li> <li>• Field of view approx 100%</li> <li>• -4 to +4 dioptre adjustment</li> </ul> <p>LCD monitor</p> <ul style="list-style-type: none"> <li>• 2.0 " TFT LCD</li> <li>• 230,000 pixels</li> <li>• Flip down and twist</li> </ul> <p>Connectivity</p> <ul style="list-style-type: none"> <li>• USB 2.0 Full Speed (12 Mbits/s)</li> <li>• A/V out</li> <li>• DC-IN</li> <li>• Remote socket</li> </ul> <p>Power</p> <ul style="list-style-type: none"> <li>• Lithium-Ion rechargeable battery</li> </ul> <p>Charger</p> <ul style="list-style-type: none"> <li>• Battery Charger</li> <li>• Battery Pack</li> </ul> <p>Memory</p> <ul style="list-style-type: none"> <li>• 32MB SD Memory Card</li> </ul> <p>Weight: 740 g (inc batt) ; 674 g (10.4 oz) (no bat)</p> <p>Dimensions: 141 x 86 x 138 mm (5.5 x 3.4 x 5.4 in)</p> <p>Accessories: A/V &amp; USB Cable</p>	
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<b>ENTOMOLOGY EQUIPMENT</b>			
1	Laboratory Chill table for insects	1	<ul style="list-style-type: none"> <li>• Rapid chill down to -5°C (23°F) or lower</li> <li>• Foam insulating cap speeds chilling and minimizes frost buildup</li> <li>• Defroster melts frost accumulation in than less than 1 minute</li> <li>• Allows tor variation in chill surface temperature</li> </ul>

			<ul style="list-style-type: none"> <li>Indicates chill surface temperature by digital centigrade thermometer</li> <li>8 x 10" (20.3 x 25.4 cm) chill surface</li> <li>Accommodates up to five 100 mm petri dishes</li> <li>Dimensions: 10 x 12 x 4.25" (25.4 x 30.5 x 10.8 cm)</li> <li>Weight: 12 pounds</li> <li>110 /220 volt AC capacity; detachable power supply</li> </ul>	
2	Pinning block	10	<ul style="list-style-type: none"> <li>Wooden pinning block for correct label and specimen height setting on insect pins.</li> <li>With three holes on side of the block at 7, 12, and 23 mm.</li> <li>Dimensions: 1 x 1 x 3" (25 x 76 mm) long.</li> </ul>	
3a	Aspirators	30	<ul style="list-style-type: none"> <li>For capture of insects too small to be picked up with forceps.</li> <li>Aluminium Intake and exhaust tubes</li> <li>Mouthpiece is 1/4" (6mm) natural latex tubing.</li> <li>Exhaust tube is protected with fine 220 mesh nylon</li> <li>Two 9-dram -1" x 2-3/4" (25 x 70mm) - clear styrene tubes with snap-on caps included</li> </ul>	
3b	9 dram Replacement tubes	50	<ul style="list-style-type: none"> <li>containers dimension: 1" x 2-3/4" (26 x 67mm)</li> <li>12 per pack</li> </ul>	
4a	Camel hair brush size 2	30	<ul style="list-style-type: none"> <li>Brushes with wood handles</li> <li>With metal ferrules</li> <li>Pointed shape tips.</li> <li>Size 2</li> </ul>	
4b	Camel hair brush size 4	30	<ul style="list-style-type: none"> <li>Brushes with wood handles</li> <li>With metal ferrules</li> <li>Pointed shape tips.</li> <li>Size 4</li> </ul>	
4c	Camel hair brush size 6	30	<ul style="list-style-type: none"> <li>Brushes with wood handles</li> <li>With metal ferrules</li> <li>Pointed shape tips.</li> <li>Size 6</li> </ul>	
5a	Insect pins size #2	50	<ul style="list-style-type: none"> <li>spring steel with black enamel finish for antirust protection.</li> <li>Nylon heads.</li> <li>Length: 39 mm (1-1/2").</li> <li>Size #2</li> <li>Packaged in lots of 100.</li> </ul>	
5b	Insect pins #3	50	<ul style="list-style-type: none"> <li>spring steel with black enamel finish for antirust protection.</li> <li>Nylon heads.</li> <li>Length: 39 mm (1-1/2").</li> <li>Size #3.</li> <li>Packaged in lots of 100.</li> </ul>	
5c	Insect pins #5	50	<ul style="list-style-type: none"> <li>spring steel with black enamel finish for antirust protection.</li> <li>Nylon heads.</li> <li>Length: 39 mm (1-1/2").</li> <li>Size #5.</li> <li>Packaged in lots of 100.</li> </ul>	
6	Minuten pins	50	<ul style="list-style-type: none"> <li>12mm long insect pins, without heads,</li> <li>stainless steel</li> <li>.20mm diameter</li> <li>Packaged in lots of 500.</li> </ul>	
7	9 dram plastic vials	36	<ul style="list-style-type: none"> <li>Pack of 25</li> <li>9 dram clear snap cap clear plastic vials.</li> <li>transparent crystal polystyrene vials</li> <li>with tabbed white polyethylene snap-caps.</li> <li>Each vial holds 1.13 fluid ounces.</li> <li>Inside dimensions: 1inch x 2 5/8 inches tall.</li> </ul>	
8a	Collecting jar	50	<ul style="list-style-type: none"> <li>9oz</li> </ul>	

8b	Collecting jar	50	<ul style="list-style-type: none"> <li>• 16oz</li> </ul>	
8c	Collecting jar	50	<ul style="list-style-type: none"> <li>• 32 oz</li> </ul>	
9	Screw cap vials with caps 8 dram	50	<ul style="list-style-type: none"> <li>• Capacity: 8 dram;</li> <li>• Diameter and length: 25 x 95 mm</li> <li>• Cap: Polyseal</li> <li>• Compatible with alcohol</li> <li>• 12 per pack</li> </ul>	
10a	Bugdorm2 rearing cage	10	<ul style="list-style-type: none"> <li>• 24 x 24 x 24" (61 cm) cage;</li> <li>• self-supported by solid fiberglass poles.</li> <li>• Front, rear, and bottom panels are clear vinyl</li> <li>• Two side panels with fine 104 x 26 mesh/inch white polyester netting.</li> <li>• Front panel with two access points.</li> <li>• With large crescent-shaped zippered panel, 21" (53 cm) across the bottom x 16" (40 cm) high</li> <li>• Small access sleeve located in the middle of the front panel is 8" (18 cm) diameter x 15" (38) cm long.</li> </ul>	
10b	Bugdorm3 rearing cage	10	<ul style="list-style-type: none"> <li>• 24 x 24 x 24" (61 cm) cage;</li> <li>• self-supported by solid fiberglass poles.</li> <li>• Front panel is clear vinyl</li> <li>• Three side panels with fine 104 x 26 mesh/inch white polyester netting.</li> <li>• Small access sleeve located in the middle of the clear front panel is 8" (18 cm) diameter x 15" (38) cm long.</li> <li>• no bottom panel.</li> <li>• four flaps, 4" (10 cm) wide, at the bottom of the side panels</li> <li>• Four loops located at the corners for staking cage to the ground.</li> </ul>	
	Cornell storage drawers (set of 12)	10	<ul style="list-style-type: none"> <li>• Dimensions: O.D. 19 x 16-1/2 x 3" (48.3 x 42 x 7.7 cm) I.D. 17-3/4 x 15-1/4 x 2-1/2" (45 x 38.7 x 6.4 cm)</li> </ul>	
	Cornell Cabinets (12 drawers)	10	<ul style="list-style-type: none"> <li>• Materials: <ul style="list-style-type: none"> <li>○ Exterior - 22 gauge steel, or .045 high-density laminate</li> <li>○ Interior - 3/4" Melamine coated particle board</li> <li>○ Aluminum extrusion drawer runners; lift-off door hinges</li> <li>○ 3-point locking handle, and aluminum lock rods</li> <li>○ 3 x 5" cardholder on steel door</li> <li>○ Tubular polypropylene door gasket; four floor levelers</li> </ul> </li> <li>• Dimensions &amp; Weights: 43" high, 22-3/8" wide, 20" deep (109 x 56.5 x 51cm)</li> </ul>	

REFERENCE MATERIALS (BOOKS AND CDs)				
1	Pest Identification kit and Supplement CD-ROM	4	<ul style="list-style-type: none"> <li>• kit of 105 photo slides,</li> <li>• 120-page Pest Identification Manual</li> <li>• student guide</li> <li>• set of 50 color slides of 44 arthropod and vertebrate pests</li> </ul>	
2	Entomology instructional DVD series	4	<ul style="list-style-type: none"> <li>• <b>5172C &amp; 5172D Insect Identification</b> One DVD consisting of three sections: (1) Live-action of 18 orders and corresponding common species. Outlines identifying characteristics (mouth parts, antennae, and other unique features) for Collembola, Thysanura, Ephemeroptera, Odonata, Plecoptera, Orthoptera, Blattaria, Mantodea, Phasmida, Dermaptera, Isoptera, Psocoptera, Phthiraptera, Thysanoptera, Neuroptera, Mecoptera, Trichoptera, and Siphonaptera; (2) Explains why bugs are insects but not all insects are bugs. Features three extensive insect orders—Hemiptera (16 common species), Homoptera (9 common species),</li> </ul>	

			<p>and Coleoptera (33 species)— and identifying characteristics for each order;</p> <p>(3) Combines live-action of well-known insects with highly specialized species from three orders: Lepidoptera (40 butterflies, moths, skippers); Diptera (15 species); Hymenoptera (13 ants, bees, horntails, sawflies, wasps).</p> <ul style="list-style-type: none"> <li>• <b>5173 &amp; 5173D - Practice Insect Identification - I</b> Increases viewers' ability to identify insects by observing their physiological structures. Four classes, each containing 10 different specimens from 16 insect orders are provided. Identification keys are included. 18 minutes.</li> <li>• <b>5174 &amp; 5174D Practice Insect Identification - II</b> Second practice program. Four classes, each containing 10 different specimens are provided from the following orders: Lepidoptera, Diptera, Coleoptera, Hymenoptera, Acari, Araneida, and Scorpionida. Identification keys are included. 20 minutes.</li> <li>• <b>5175 &amp; 5175D Arthropod Identification</b> Covers arthropods closely related to insects. Identifies six classes and eight orders, including 15 species. Size, color, and unique characteristics are provided for ticks, mites, spiders, and scorpions. Quiz available on web site. 20 minutes.</li> <li>• <b>5176 &amp; 5176D Collection and Preservation of Insects</b> Explains how, why, where, and when to collect insects. Covers necessary equipment, and demonstrates techniques for safe and proper usage. Also shows how to preserve specimens in alcohol, on slides, and on pins, and how to use spreading boards. Quiz available on web site. 23 minutes.</li> <li>• <b>5177 &amp; 5177D Insect Metamorphosis and Structure</b> Features enhanced computer graphics in combination with actual insects in various stages of growth showing important aspects of gradual, complete, and incomplete metamorphosis. Includes microscopic views of important insect structures (mouth parts, antennae, wings). Study guide available on web site. 22 minutes.</li> <li>• <b>5178 &amp; 5178D Identification and Classification of Insects</b> Focuses on scope and role of insects in the animal kingdom. Enables viewers to identify and classify hundreds of insects. Discusses types and use of identification keys and anatomical structure plus environmental importance and effects of insects. Video camera, microscopic views of various insects are shown, identifying characteristics that positively identify insect species. Study guide available on web site. 25 minutes.</li> </ul>	
3	TAXAPAD CD on Chalcidoidea	4	<ul style="list-style-type: none"> <li>• <i>Interactive Catalogue of World Chalcidoidea 2001 - Taxapad 2002 (CD-Rom)</i> includes REFINd for Windows 95, 98, 2000, NT &amp; XP by <i>John S. Noyes</i></li> </ul>	
4	TAXAPAD CD on Ichneumonoidea	4	<ul style="list-style-type: none"> <li>• <i>World Ichneumonoidea 2004 Taxapad 2005</i> includes REFINd for Windows 98, 2000, NT &amp; XP by <i>Dicky S. Yu, Kees van Achterberg &amp; Klaus Horstmann - CD-ROM version</i></li> </ul>	
5	Diptera data CD -ROM	4	<ul style="list-style-type: none"> <li>• DIPTERA DATA, VOL.1, DISSEMINATION DISK CD</li> </ul>	
6	Beetles of the world CD-ROM	4	<ul style="list-style-type: none"> <li>• <i>Beetles of the World, A Key and Information System for Families and Subfamilies CD-ROM</i></li> </ul>	
7	Beetle larvae of the world CD-ROM	4	<ul style="list-style-type: none"> <li>• <i>Beetle Larvae of the World, Descriptions, Illustrations, Identification, &amp; Information Retrieval for Families and Subfamilies CD-ROM</i></li> </ul>	
8	CONTROL OF PESTS AND WEEDS BY NATURAL ENEMIES, Paperback,	5	<ul style="list-style-type: none"> <li>• CONTROL OF PESTS AND WEEDS BY NATURAL ENEMIES: An Introduction to Biological Control by Roy Van Driesche, Mark Hoddle &amp; Ted Center, 2008, 484 pages,</li> </ul>	
9	IPM IN PRACTICE:	5	<ul style="list-style-type: none"> <li>• IPM IN PRACTICE: Principles and Methods of Integrated</li> </ul>	



	Principles and Methods of Integrated Pest Management		<ul style="list-style-type: none"> <li>Pest Management Univ. of Calif. ANR, Mary Louise Flint &amp; Patricia Gouveia, authors. Paperback; 8-1/4 x 10-3/4".</li> </ul>	
10	Citrus Health Management	5	<ul style="list-style-type: none"> <li>Edited by L. W. Timmer and Larry W. Duncan, ©1999; 8.5" x 11" softcover; 197 pages; 90 color photographs; 24 black and white illustrations; 1 pound; ISBN 978-0-89054-227-9</li> </ul>	
11	Compendium of Citrus Diseases	1	<ul style="list-style-type: none"> <li>Second Edition Edited by L. W. Timmer, S. M. Garnsey, and J. H. Graham. ©2000; 8.5" x 11" softcover; 128 pages; 207 color illustrations; 31 black and white illustrations; 1 pound; ISBN 978-0-89054-248-4</li> </ul>	