Afghanistan
Unlocking the Potential of Horticulture

Discussion Note and Input to Agribusiness Jobs Charter

June 2017

Contents

Acronyms and Abbreviations

A2F	Access to Finance
AAEP	Afghanistan Agricultural Extension Program
AAIP	Agricultural Inputs Program
ACE	Agricultural Credit Enhancement
ACCI	Afghanistan Chamber of Commerce and Industry
ADF	Agricultural Development Fund
ADCUS	Agriculture Data Collection and Utilization System
AGRED	Afghanistan Agricultural Extension Development
AISA	Afghanistan Investment Support Agency
ANPDF	Afghanistan National Peace and Development Framework
ANHDO	Afghanistan National Horticulture Development Organization
ANNGO	Afghanistan National Nursery Growers Organization
ANSA	Afghanistan National Standards Agency
APTTA	Afghanistan-Pakistan Transit Trade Agreement
ARIA	Agricultural Research Institute of Afghanistan
ARFVPA	Afghan Raisin, Fruits, and Vegetables Promotion Administration
ASAP	Accelerating Sustainable Agriculture Program
ASMIS	Agricultural Statistics and Management Information Systems
ASYCUDA	Automated System for Customs Data
BRT	Business Receipt Tax
CAREC	Central Asia Regional Economic Cooperation
CBTA	Cross Border Transport Agreement
CHAMP	Commercial Horticulture and Agricultural Marketing Program
COM	Council of Ministers
CSO	Central Statistics Organization
CU	Control Union
DAIL	District Agriculture, Irrigation, and Livestock
DAP	Diammonium Phosphate
ECO	Economic Cooperation Organization
EU	European Union
FAO	Food and Agriculture Organization of the United Nations
FAOSTAT	Food and Agriculture Organization Corporate Statistical Database
GDP	Gross Domestic Product
GIRoA	Government of the Islamic Republic of Afghanistan
HACCP	Hazard Analysis and Critical Control Point
IATA	International Air Transport Association
IFC	International Finance Corporation
IIFCG	Islamic Investment and Finance Cooperative Group
IVR	Interactive Voice Response
MAIL	Ministry of Agriculture, Irrigation, and Livestock
MIGA	Multilateral Investment Guarantee Agency
MOCI	Ministry of Commerce and Industries
MoPH	Ministry of Public Health
MOU	Memorandum of Understanding
NCADP	National Comprehensive Agriculture Development Priority Program

NGO	Nongovernmental Organization
NHLP	National Horticulture and Livestock Project
NQI	National Quality Infrastructure
NSW	National Single Window
NTFC	National Trade Facilitation Committee
PATTTA	Pakistan-Afghanistan-Tajikistan Transit Trade Agreement
PHDP	Perennial Horticulture Development Program
PPQD	Plant Protection and Quarantine Department
SAARC	South Asian Association for Regional Cooperation
SIRM	Systemic Investment Response Mechanism
SMEs	Small and Medium Enterprises
SOEs	State-owned Enterprise
TIR	Transit International Routier
TFA	Trade Facilitation Agreement
UPS	United Parcel Services
USDA	United States Department of Agriculture
USAID	U.S. Agency for International Development
WTO	World Trade Organization

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Executive Summary

This report highlights five key messages.

1. **Given its contribution to the economy, upside potential, and labor intensity, horticulture will constitute an important pillar of the proposed Agribusiness Jobs Charter:**

   (a) ***Horticulture is a key contributor to jobs and economic growth in Afghanistan*.** The horticulture sector generates 34 percent of Afghanistan's agricultural gross domestic product (GDP), 7 percent of national GDP,[1] and 50 percent of Afghanistan's export earnings.[2] Horticultural crop production, processing, and trade employ an estimated 2 million people. While most are small-scale farmers, employees of the sector also include thousands of traders, harvesters, sorters, cleaners, and processors adding value to the marketed commodity.

   (b) ***The relatively good performance of the sector is mostly due to the sale of low-value products to the domestic and regional markets*.** Although there has been a positive trend with exports of Afghan horticultural products such as dried fruits, nuts, and semi-perishables, most of these exports are targeting low-paying traditional markets in neighboring countries. Only limited quantities are being exported to high-end markets in Europe, the Middle East, or more distant Asian countries, with many being rejected because of poor quality and/or unreliable delivery and delays.

2. **The survey of processors and traders undertaken for this report highlights that difficulties to access high-value export markets is the main constraint to the development of the sector.** Other constraints, well documented in previous reports, include fragile business environment, inadequate infrastructure, lack of skills, and financing:

   (a) ***Difficulty in accessing high-value export markets has been the main constraint to growth of the horticulture sector*.** Trade in horticultural products remains a high-risk activity due to border closures, roadblocks, cross-loading at border crossings, and the lack of refrigeration along the supply chain. Rates of commodity theft and spoilage are high. These problems are exacerbated by the absence of quality and phytosanitary certifications and the poor reputation of Afghan products in many export markets. Afghan exporters spend 86 days on average to ship their goods at a cost of US$5,045 per container. The country's export delays have worsened over time, from 67 days in 2005 to 86 days in 2014. It takes 228 hours and US$344 to comply with documentary requirements for export. As a result, nearly half of Afghan firms perceive customs and trade regulations to be a major constraint. Such uncertainties discourage long-term private investments in the development of higher-value crops (for example, perennials), cold storage, and processing facilities.

   (b) ***Other constraints (fragile business environment, inadequate infrastructure, insufficient human capacity and technology, lack of investment) are exacerbated by coordination failures within the Government.***

[1] Altai Consulting 2015.
[2] CSO 2016a.

3. **The report underscores the need for a shift in paradigm which takes the market as the starting point and works toward producers (instead of starting from the production side).** The National Comprehensive Agriculture Development Program (2016) listed eight strategic priorities that are focused largely on producers. To that list, this report adds three strategic priorities that are market facing: (a) trade facilitation, (b) agribusiness hubs and industrial parks, and (c) finance. Specific recommendations in each of these three dimensions include the following:

(a) Afghanistan should pursue a multipronged strategy to improve the access of horticultural producers and traders to high-end markets:

(i) Address prevailing border and customs issues—such as closures, burdensome customs procedures, and cross-loading requirements—that imperil the ability of traders to deliver fresh produce to export markets. As part of the needed review and revival of the Afghanistan-Pakistan Transit Trade Agreement (APTTA), the governments of Afghanistan and Pakistan could consider the creation of a secured and efficient 'green channel' for perishable horticulture products.

(ii) Support the development of air cargo facilities and services.

(iii) In conjunction with the private sector, strengthen standards certification and quality assurance procedures to increase the proportion of produce that is acceptable to wholesalers and retailers in high-end markets.

(b) Afghanistan should undertake investments which resolve a bundle of constraints facing producers (access to land, utilities, and key services) simultaneously:

(i) Facilitate access to serviced industrial and agriculture land through Agribusiness Parks and to private developers of zones and irrigation perimeters. The regulations for obtaining plots of land under these parks should be clear and transparent. The location of these parks should be carefully selected to be in proximity to areas of agriculture production and supply. The Government could also transfer the land belonging to defunct state-owned enterprises (SOEs) to the Industrial Park Directorate to be used for the development of agricultural industrial parks.

(ii) Address concerns of impropriety in the allocation of serviced land by ensuring an efficient and equitable process by which productive firms can obtain plots in industrial parks.

(c) Given the highly insecure and fragile context of Afghanistan, there is a need for a Public-Private Partnership approach under which the Government (and development partners) goes the extra mile in providing support to the entry/expansion of leading investors along the end-to-end horticulture value chains. This agenda can be advanced through measures like

(i) Promoting 'productive alliances' between producers, buyers, and the public sector by expanding the Agricultural Development Fund (ADF) (which provides financing facilities to processors and their suppliers) and simultaneously evaluating the merits of, or alternatives to, an Agricultural Bank;

(ii) Extending matching grants to agribusiness micro, small, and medium enterprises on a competitive basis to boost productivity-enhancing, innovative, and risk-taking activities along the value chain; and

(iii) Providing 'Patient Capital' as a structural Access to Finance (A2F) solution in the form of insurance and/or long-term financing facilities to strategic new investors (for example, organizing a global competition to provide access to the new International Finance Corporation [IFC] Private Sector Window).

4. **Given this new paradigm and proposed solutions, the report highlights the need for the Government to set up an integrated implementation mechanism involving relevant ministries, including the Ministry of Agriculture, Irrigation, and Livestock (MAIL), the Ministry of Commerce and Industries (MOCI), and so on in close collaboration with the private sector.** A positive milestone achieved through the process of preparing this report has been to convene the two key ministries (MAIL and MOCI] that had limited collaboration until a year back and, today, have formed joint active working groups.

5. **This report provides an overall framework and basis for further engagement with the Government and other stakeholders on the proposed Agribusiness Jobs Charter.** The proposed next steps are to

(a) Engage with the Government to identify two to four concrete strategic priorities;

(b) Prepare short background notes on these strategic priorities;

(c) Launch a series of discussions on each of these strategic priorities with the Government and other stakeholders, potentially through a Public-Private Dialogue mechanism, to (i) break each strategic priority down to actionable recommendations; (ii) sequence the list of actionable recommendations into short term (0–1 year), medium term (2–5 years), and long term (6+ years) activities, based on considerations such as cost, time, complexity, and impact; and (iii) develop detailed and realistic 'immediate implementation plans' for each short-term activity; and

(d) Support the immediate implementation plans through the existing and available instruments and products of the World Bank Group.

6. **The report is organized as follows:**

(a) Chapter 1 summarizes the recent literature on the horticulture sector.

(b) Chapter 2 presents the results of the survey undertaken for this report.

(c) Chapter 3 lists recommendations and next steps.

1 Background

Afghanistan possesses a rich horticultural history, with a number of unique products—such as dried fruit—that are still renowned in various parts of the world. The period of conflict that has plagued Afghanistan for the past 40 years has, however, severely disrupted supply chains and markets for horticultural products and, in particular, hindered the ability of traders and producers to export products to high-value markets. The following sections provide an overview of the horticultural sector in Afghanistan and its various components. Section 1.1 describes the history and economic importance of horticulture in Afghanistan, Section 1.2 describes the endowments and infrastructure that support the production and trade of horticultural crops in Afghanistan, Section 1.3 presents an overview of the nature of horticultural inputs in Afghanistan and details methods for producing horticultural crops, Section 1.4 describes the structure of post-harvest activities, Section 1.5 reviews the processing and marketing of horticultural products in Afghanistan, Section 1.6 presents and overview of the recent performance of the horticulture sector in Afghanistan, and Section 1.7 describes recent and current policies and programs focusing on the horticulture sector in Afghanistan.

1.1 Context

Afghanistan's natural endowments create fertile conditions for horticultural products and, despite poor recent performance, the sector is crucial to the overall economy. Afghanistan possesses a geography and climate that are conducive to the cultivation of horticultural crops of high quality, but the sector has suffered greatly amidst the past 40 years of conflict (Subsection 1.1.1). Nonetheless, the sector remains of paramount importance to the overall economy, providing employment and income to millions of Afghans and contributing to half of the country's export revenues (Subsection 1.1.2).

1.1.1 History

Afghanistan was once a main supplier of horticulture products to international markets. Horticulture has always been a strong asset of the Afghan economy, because of its climate diversity which allows for a large spectrum of crops, long and staged harvest periods beneficial for export, relatively good soils, and availability of groundwater. In the 1970s, Afghanistan supplied over 30 percent of all dried apricots, 18 percent of raisins, 12 percent of pistachios, and roughly 6 percent of grapes and fresh apricots traded in international markets.[3]

Conflict has damaged Afghanistan's horticulture sector and the country's share of the international market for key products has dwindled. Afghanistan experienced a sharp decline in its market share of horticultural products because of the deteriorating security situation in the country, while other countries emerged as reliable suppliers. While Afghanistan's exports have grown in recent years, these have not kept pace with the expansion of global trade in horticultural commodities, resulting in a loss of market share. Currently, Afghanistan supplies only 3.5 percent of the internationally traded dried apricots, less than 3 percent of the raisins, and less than 1 percent of pistachios appearing in international markets. However, Afghanistan's horticultural sector has grown rapidly over the past 10 to 15 years. The Agricultural Sector Review carried out by the World Bank in 2014 cited an average annual growth rate of 5.5 percent in sector value.

[3] FAO 2017.

1.1.2 Economic Importance

Agriculture is economically important but dominated by small-scale farmers. Agriculture is the second largest pillar of the economy of Afghanistan after the services sector, contributing around 25 percent to its GDP; the percentage becomes even higher if processing of agricultural products is included. The agriculture sector employs around 40 percent of the country's working force and provides support to approximately 80 percent of its population.[4] Generally, the agriculture sector in Afghanistan is characterized by small-scale farmers; 75 percent of the farmers own one Jereb (one-fifth of a hectare) or less.

A third of Afghanistan's agricultural production and half of Afghanistan's export earnings are provided by horticulture. The cultivation of horticulture crops in Afghanistan occupies 340,000, or 14 percent of irrigated land. With a total contribution of US$1.4 billion, it represents 34 percent of the agriculture portion of Afghanistan's GDP or 6.7 percent of total GDP and roughly 50 percent of Afghanistan's export earnings. Horticultural crop production, processing, and trade require nearly 200,000 full-time equivalent jobs and provide seasonal income to as many as 2 million Afghans.

1.2 Endowments and Infrastructure

While Afghanistan's climate diversity enables the production of a wide range of high-quality crops, the country's geography impedes the trade of such crops. Approximately 10 percent of Afghanistan's total land area is devoted to the cultivation of horticultural crops, of which fruits and vegetables dominate (Subsection 1.2.1). As Afghanistan has a semiarid climate and soils exhibit poor water retention, irrigation is necessary for cultivation of most horticulture crops in the country (Subsection 0). To transport produce to domestic and international markets, producers and traders must bear transport costs that are relatively high due to the country's mountainous topography, limited internal transport infrastructure, and landlocked geography (Subsection 1.2.3).

1.2.1 Land Area and Land Use

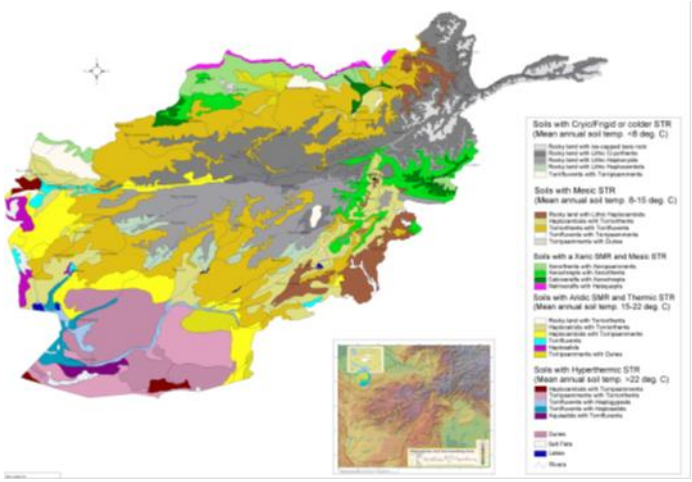
There is no reliable and precise estimate of the amount of land which is cultivated for horticulture. MAIL regularly reports that 120,000 ha are cultivated for fruit, 70,000 ha for vegetables, 70,000 ha for pulses, and 5,000 for 'medicinal seeds', bringing the total to approximately 265,000 ha. The Food and Agriculture Organization Corporate Statistical Database (FAOSTaT), however, estimated that 306,000 ha were cultivated for horticultural crops in 2012: 110,000 ha for fresh fruit (including 61,000 ha for grapes), 25,000 ha for nut trees, 98,000 ha for vegetables, 71,000 ha for pulses, and 18,000 ha for herbs and spices. Both sources probably underestimate certain categories. For instance, the 2010 Food and Agriculture Organization of the United Nations (FAO) Land Cover Atlas identified, through remote sensing analysis, 251,000 ha of fruit trees and 93,000 ha of vineyards, placing the total well above 340,000 ha. Altai (2016) estimates, on the basis of these data sources, that horticultural crops are cultivated on between 350,000 and 400,000 ha (or about 10 percent of the total area under irrigated cultivation in the country), of which 40 percent is devoted to fruits, 30 percent to vegetables, 25 percent to pulses, and 5 percent to other crops (herbs and spices). The main crops grown and exported are grapes/raisin, almond, pomegranates; and other crops, including apple, pistachio, and apricot. Additionally, a large number of vegetable crops are grown and consumed domestically.

[4] World Bank. 2014.

Figure 1: Land Cover Map of Afghanistan, 2010

Source: FAO 2012.

Figure 2: Soil Regions of Afghanistan



Source: United States Department of Agriculture (USDA) 2001.

Table 1: Area Planted in Horticulture Crops, Various Estimates (ha)

	MAIL	FAOSTaT	Landcover
Fruit	120,000	135,000	344,000
Vegetables	70,000	98,000	n.a.
Pulses	70,000	71,000	n.a.
Others	5,000	18,000	n.a.
Total	**265,000**	**322,000**	**>344,000**

Source: Altai Consulting (2015)

1.2.2 Soil Quality and Irrigation

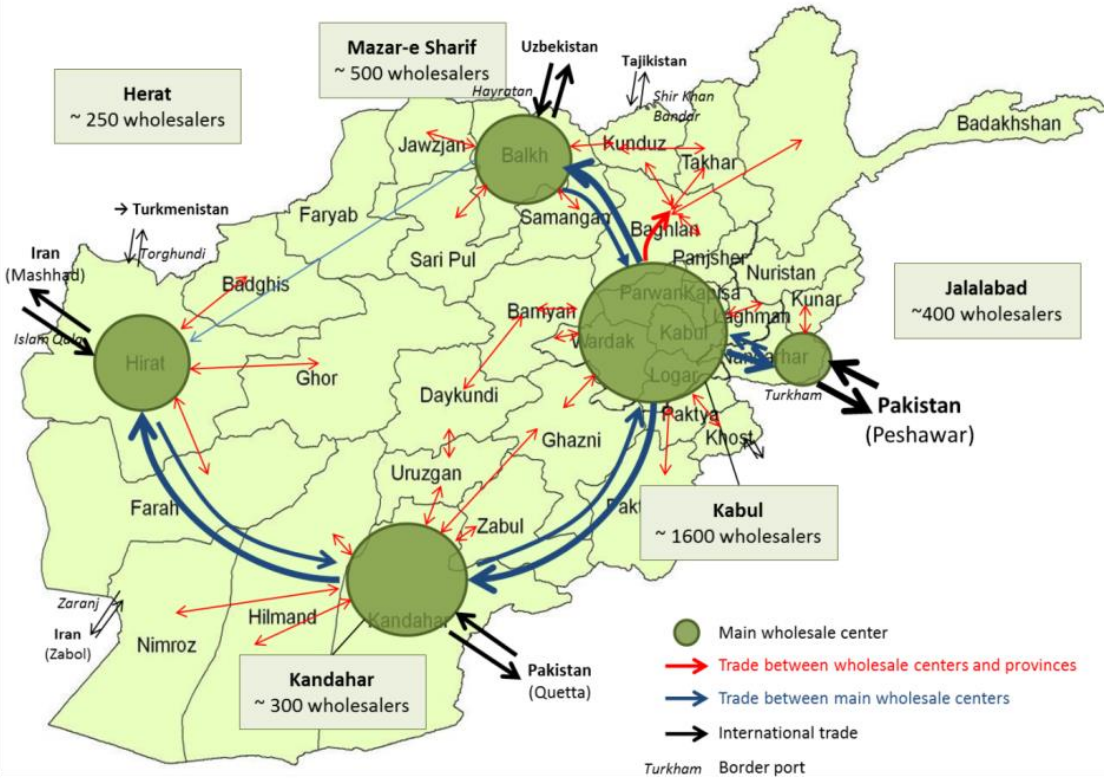
Due to Afghanistan's climate and soil condition, irrigation is essential for the cultivation of horticultural crops in the country. Afghan soils are light-textured and acidic (pH of 8 to 8.5), have a high content in

calcium carbonate, and have a low organic matter content (0.2 to 2.5 percent). A poor soil structure entails low water-holding capacity. Soil fertility tests have shown insufficient levels of nitrogen and common deficiencies in micronutrients (iron, zinc, copper, and boron). Given the semiarid climate and poor water retention of soils, irrigation is necessary for cultivation of horticulture crops. Most of the orchards and vineyards are at least partially irrigated, nearly all vegetables and pulses are cultivated on irrigated land, and only a few products (for example, cumin) grow on rain-fed land, partly in rotation with other crops (cereals and fodder crops). The most commonly used irrigation system for horticulture products is furrow irrigation (small parallel channels following the slope, above rows of plants, delivering water by gravity), often used in surges. Afghan horticulture farmers often have limited knowledge of crop water requirements along the crop cycle, and over-irrigation is a common practice.

1.2.3 Transport

Transportation infrastructure in Afghanistan is limited but much has been rehabilitated in the past 12 years. Major urban centers (Kabul, Kandahar, Mazar-e-Sharif, Herat, and Jalalabad) are connected by a ring road. However, they are poorly maintained and stretches of the ring have been damaged or destroyed due to ongoing conflict. In total, Afghanistan has over 35,000 km of roads, but only 30 percent are paved. A number of donor-funded programs are building roads. Afghanistan has international border crossings with Pakistan, the Islamic Republic of Iran, Turkmenistan, Uzbekistan, and Tajikistan. Major trade border crossings include the Torkham and Spin Boldak to Pakistan, Islam Qala and Zaranj to the Islamic Republic of Iran, the Tajik-Afghan Friendship Bridge, Tajikistan-Afghanistan Bridge at Panji Poyon, and the Afghan-Uzbek Friendship Bridge.

Figure 3: National and International Trade Routes and Wholesale Markets



Source: Altai Consulting (2015)

As a landlocked and mountainous country, Afghanistan relies on a small number of trade routes to export and import products. Afghanistan is surrounded by Tajikistan, Uzbekistan, and Turkmenistan from the north, the Islamic Republic of Iran to the west, Pakistan to the south and southwest, and China to the northeast. Trade and logistics are influenced by the limited number of supply routes to neighboring countries and political relations with those countries. Large trade transactions in Afghanistan are focused in the main four large cities, Kabul, Mazar-e-Sharif, Herat, and Kandahar, followed by Jalalabad at a smaller scale. Afghanistan has access to the sea through Karachi port in Pakistan and Chabahar in the Islamic Republic of Iran. Afghanistan has 53 airports, of which 19 have paved runways and 5 have runways longer than 2,500 m. Afghanistan has a limited rail network, with 75 km of rail connecting Mazar-e-Sharif and Uzbekistan. A number of railway projects have been considered for several years but were never started. The Government of the Islamic Republic of Afghanistan (GIRoA) had an agreement with the China Metallurgical Corp to build 921 km of rail connecting Kabul with Turkmenistan, Pakistan, and the Central highland to Mazar-e-Sharif as part of a US$4 billion mining contract.

Table 2: Road Border Crossings Between Afghanistan and Its Neighboring Countries

Afghanistan – the Islamic Rep. of Iran (2)	Islam Qala, Zaranj
Afghanistan - Tajikistan (3)	Sherkhan Bandar, Ishkashim, Ai Khanum
Afghanistan - Turkmenistan (2)	Aqina, Torghondi
Afghanistan - Uzbekistan (1)	Hairatan
Afghanistan - Pakistan (3)	Torkham, Spin Boldak, Ghulam Khan

1.3 Inputs and Production Methods

There is relatively limited use of modern agricultural inputs by farmers of horticultural products in Afghanistan. Local capabilities for research and extension, which degraded during the Soviet occupation and Taliban regime, have been revitalized since 2001 (Section 1.3.1). The development of more efficient seed varieties in Afghanistan, however, is hindered by the tendency of farmers to buy seed rather than breeding seed to ensure adaptation to local conditions (Section 1.3.2). Afghan farmers tend to use imported, low-quality fertilizer and chemicals, although pesticides and herbicides are applied less frequently (Section 1.3.3). While tractors and other forms of machinery are becoming more common in horticultural production in Afghanistan, costs and a lack of technical expertise ensure the dominance of traditional, nonmechanized production techniques (Section 1.3.4).

1.3.1 Research and Extension

While horticulture research has been conducted in Afghanistan for over 50 years, capacities degraded during the Soviet occupation and during the Taliban regime. Agricultural research organizations were first established in Afghanistan in the 1960s with support from the U.S. Government. Extension services, originally created early in the century, were largely developed in the 1970s with assistance from the U.S. Government and the World Bank. Minimal horticulture research took place in Afghanistan between the 1980s and 2001, as the Communist government attempted to adopt a state-farm model focused on cereal production and as large swathes of agricultural land were consumed by conflict. Extension services intended to disseminate advances and best practices to the agricultural community were drastically

reduced both in manpower and activity. University-based agriculture research in Afghanistan remains limited, with most faculty research being limited to translating English articles into Dari.[5]

After 2001, a number of donor-funded initiatives have improved MAIL's capacity to conduct and disseminate research. Currently, MAIL possesses 17 research facilities across the country, supervised by the Agricultural Research Institute of Afghanistan (ARIA).[6] MAIL also maintains extension services at each of the provincial offices, although the capabilities and resources of Afghan extension services vary greatly from province to province and extension agents often perform tasks unrelated to their role. A number of programs focus on horticulture research and extension. The European Union (EU)-funded Perennial Horticulture Development Program (PHDP) supports a plant biotechnology laboratory to identify disease-free, locally appropriate varieties that are subsequently certified and promoted. The USDA-funded Afghanistan Agricultural Extension Program (AAEP) works to improve extension services in key District Agriculture, Irrigation, and Livestock (DAIL) offices by training extension agents and creating demonstration farms. The United States-funded Afghanistan Agricultural Extension Development (AGRED) program also seeks to improve MAIL's research and extension capabilities through implementing a variety of targeted mini projects and conducting research on the control of melon fly and introduction of improved grape varieties. MAIL holds a yearly conference to summarize research activities.

1.3.2 Seed and Saplings

For the majority of crops, producers will buy seed, which hinders improvements through adaptation. Seed may be purchased either in the farmer's own village or in the provincial center, with a preference for the closest possible purchase location to the farm.[7] Although some seed is imported, for the majority of horticulture products, seed is domestically produced.[8] While extensive work has been done to improve and certify varieties of wheat and fruit and nut seed,[9] development of vegetable seed has been much more limited and the seed is traded between individuals and shops much more freely.[10] Farmers may

[5] Strengthening Afghan Agricultural Faculties (SAAF) Baseline Study and Assessment, January 2012.

[6] Three of these facilities are in the Kabul area and include the Qargha Vegetable Farm, the recently added Dry Land facility, and the Badam Bagh Research Farm, which includes the plant biotechnology laboratory alongside the research farm. Outside of Kabul, facilities are primarily research farms run by DAIL offices, often in cooperation with the PHDP, AAEP, AGRED, or Japan International Cooperation Agency. While each DAIL research farm has space nominally dedicated to horticulture, activity at DAIL research facilities is primarily focused on grains, with some work on potato, tomato, and pepper. Research related to fruit trees is mostly limited to facilities where work is done in cooperation with the PHDP.

[7] For example, in Herat province, farmers prefer to buy onion seed from within their village, while certain varieties of hybrid watermelon do not self-reproduce and so must be purchased from the district or, more often, provincial center.

[8] Seed sellers commonly follow one of two models: the shop sells seed and chemicals, or the shop sells seed and spices, with the former being most common. Seed producers bring the product directly to shops, with major cities generally acting as a trading hub.

[9] A certification scheme for improved varieties of fruit trees and nuts is run by the PHDP. Saplings are certified as true-to-type and disease-free and sold in over 1,000 certified nurseries that exist in every province of the country. While farmers may opt to reproduce fruit and nut trees themselves, most simply purchase saplings from nurseries. In addition to certified nurseries, there exist uncertified nurseries which generally sell products for a much lower price and carry a larger number of varieties.

[10] A grading system for the trade, as it exists, could greatly improve quality, yield, and resistance to disease and drought over time. By grading and certifying the quality of a parent crop, either in the field or through samples, farmers can be made to be better informed when purchasing seed with minimal investment in certification infrastructure.

carry out seed multiplication, treating seed simply as a potential cash crop. Although farmers have particular characteristics they look for when buying seed, this practice denies producers the benefits of any sort of selection in breeding or adaptation to particular conditions.

1.3.3 Fertilizers, Chemicals, Pollination, and Control of Weeds, Diseases, and Pests

To compensate for lack of nitrogen and phosphorus, Afghan farmers commonly fertilize soil with diammonium phosphate (DAP), urea, and natural manure. Ammonium nitrate was previously preferred to urea by Afghan farmers due to lower cost, but it has been banned since 2009 as it is commonly used in explosive devices. Smuggled ammonium nitrate can be found in Afghan markets, albeit at much higher prices. Most fertilizer used in Afghanistan is imported (primarily from Pakistan, with some urea coming from the Islamic Republic of Iran and Central Asia) and of low quality.[11]

Afghan farmers lack the knowledge necessary to properly fertilize crops, often using inappropriate amounts during the wrong period in the growth cycle. In many cases, Afghan farmers do not have a clear understanding of the effects of different functions of nitrogen, phosphorus, and potassium or of the specific seasonal requirements of their crop in relation to the soil. A common attitude is the lack of confidence in imported fertilizers, which sometimes leads to overusage. Land planted with annual horticulture crops are typically fertilized using animal manure. At planting, further chemical fertilizer (DAP and urea) will ordinarily be applied depending on the perceived needs of a particular crop. However, no measurement of soil composition is typically taken, and the amount of fertilizer used is determined more by tradition than other factors. For fruit trees, DAP and manure will be applied during the winter, again with measurements largely determined by historical usage.

Herbicide and pesticide use is low, while chemicals are often overused. Weeding is generally done manually with a shovel or sickle. Occasionally, herbicides will be used if weed growth is considered to be out of control. However, available herbicides are generally considered to be of low quality and are therefore avoided when possible. Control of disease and pests is quite problematic in Afghanistan. Best practices are not routinely applied and available chemicals that would be used to control disease and pests are considered to be of low quality and expensive. Further, farmers have little knowledge regarding the proper use of these agents. Typically, a farmer will apply a chemical twice or thrice the recommended number of uses. The most common control method used is lime sulfur, which is used to prevent powdery mildew in grapes. While pesticides are available on the Afghan market, the high cost of quality pesticides limits their use.[12] Additionally, the quality of the most readily available chemicals is popularly viewed as low. While it is likely that imported pesticides are in fact largely of a low quality, their efficiency is also limited by farmers' poor knowledge of their application.

Many horticulture crops cannot self-pollinate and require vectors for cross-pollination. The most commonly used pollinator for many crops is the use of bees, preferably the honeybee (or fig wasps for figs and bumblebees for tomatoes). For some crops, using bees to facilitate pollination can increase yield by up to 40 percent. While there were about 150,000 bee colonies in Afghanistan in 2009, estimates indicate there were between 200,000 and 400,000 in early 2014. Bees are very sensitive to diseases as

[11] Afghanistan has one functioning fertilizer factory, the Kod-i-Barq factory in Balkh. This factory, built in 1967 to produce 105,000 tons of urea per year, typically produces less than one-third of this amount and at a price far higher than imported urea.

[12] For example, pesticides distributed by international donors in Uruzgan, in 2009, to fight shield lice affecting almond orchards cost US$400 to treat one hectare, which is higher than the average monthly farm income (US$328) in the province during the period when almonds are marketed (Altai Consulting 2015).

well as pesticides and training beekeepers to handle bees will take time. Wax, a necessary input for beekeeping, is not readily available in good quality. Afghan farmers appear to be prone to see bees as damaging to fruit trees. Some crops such as almonds are not self-fertile and require usage of pollinizers of the same species but different, compatible varieties to be planted at regular intervals. Finding the correct combination of compatible varieties is an important factor in orchard management, which is not commonly understood by Afghan farmers. The PHDP has been researching this problem in Afghan orchards and extension is required for this practice to be disseminated more widely.

1.3.4 Machinery, Soil Preparation, and Irrigation

Most pieces of agricultural machinery in Afghanistan are small tractors. Tractors are available to farmers for rental, from both private companies and from the Government through DAIL offices in about half of Afghanistan's provinces. However, as rental services are largely located in district centers, they can be difficult and expensive to access for farmers in isolated areas. While other types of farm machinery are becoming more common in Afghanistan, the associated expense, a lack of technical expertise, unsuitable geography, and/or insecurity result in the continued dominance of traditional nonmechanized practices. Many donor-funded assistance programs have provided sorting, processing, and packaging machines over the past 10 years, but farmers have been reluctant to adopt the new technologies due to high running costs, a lack of training on operation, and limited capacity for maintenance and repair.[13] In areas where machinery has been adapted, it has caused drastic changes in production methods and reduced the demand for labor, resulting in land consolidation and migration to urban areas.

While the use of machinery for land preparation is more common close to district centers, land preparation by hand predominates for horticulture crops. The majority of annual horticulture crops are planted in furrows, although a few (such as onions and cumin) are planted by hand using the broadcast method. Due to the small scale on which the majority of annual horticulture crops are planted, land preparation is carried out by shovel or using animal-drawn ploughs. In areas closer to district centers, land is more likely to be tilled by a tractor.[14] In areas farther away from the district center, a tractor may be rented by a group of farmers who share the cost.

Flood irrigation is the predominant irrigation method, regardless of the needs of a particular crop. Annual crops or grape vines will be irrigated using furrows and fruit trees will be irrigated using a surrounding basin. Efforts have been made to introduce other types of irrigation more suitable to specific crops, such as drip irrigation. A number of demonstration plots have been set up at DAIL facilities to show the effectiveness of new methods. However, adoption is slow and limited in scope, as the initial outlay for implementation is expensive and efforts reach a limited number of farmers.

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[13] Another problem is that many programs have opted to provide more advanced equipment from Europe or the Americas that is ill-suited to the current Afghan context. Creating a publicly available agricultural development infrastructure investment guideline (which would enumerate sources of spare parts and availability of skilled maintenance workers) could push donors toward more suitable machinery for the Afghan environment. Machinery already used under similar conditions in neighboring countries should be given preference over higher-tech equipment that will sit unmaintained and unused. Supporting vocational education related to equipment maintenance and repair will be key to further development of the sector.

[14] However, this added cost is frequently viewed as prohibitive, and in many regions the size of land cultivated by a single family may be too small to make land preparation by machine cost-effective.

1.4 Post-Harvest Activities

A substantial portion of the value of horticultural products is lost due to a lack of storage facilities, due to inadequate packing and handling practices, and by insecurity and uncertainty associated with domestic and international transportation of produce. Despite a large volume of investments by donors, few producers and/or traders have access to cold storage facilities of an acceptable standard (Subsection 1.4.1). Practices concerning the packing and handling of horticultural produce in Afghanistan remain rudimentary, resulting in the repacking of Afghan produce once it reaches export markets (Subsection 1.4.2). Transportation of produce across and out of Afghanistan is expensive and risky, with disruptions and unforeseen expenses often affecting cross-border exports (Subsection 1.4.3).

1.4.1 Storage

The majority of storage facilities in Afghanistan remain substandard. Adequate cold storage is necessary for producers and traders to maximize income post-harvest and be able to compete in international markets. In Afghanistan, traditional storage facilities are cellars built partly underground to keep fruit and vegetables cool. The cellars range from small rooms to somewhat larger spaces with a capacity of 15–20 mt. Spoilage can be quite high in the cellars, as the temperature fluctuates and the humidity is not controlled. Farmers estimate spoilage is in the 30–35 percent range once the commodities have been placed into the storage cellars.

International donors have funded the construction of modern cold storage facilities. In 2006, the Rebuilding Agricultural Markets Program (RAMP) program built 21 cold stores in 10 provinces. However, Afghanistan lacks the technical and financial resources to maintain modern assets that have been built, especially outside of major cities. Cold storage facilities are expensive to operate. For example, a minimum income of US$32,000 per month is necessary to break even for the facility in Kandahar, which equates to 1,600 mt of product per month based on US$0.02 rent per kilogram per month.[15] The Government lacks the necessary resources to sustain such costs and the business community is reluctant to invest in major facilities given the security uncertainty. However, a privately funded modern cold storage facility, the Morvarid Food Industries Facility, operates successfully in Herat.

1.4.2 Sorting, Grading, Packing, and Handling

In Afghanistan, sorting, grading, packaging, and handling are rudimentary. The primary concern for producers or wholesalers is to pack as much of the product as possible into boxes or bags rather than to protect the fruit and vegetables from damage. Products are often weighed on simple scales, resulting in inaccuracies in measurement. At the farm level, fruit such as grapes or vegetables such as potatoes are handpicked and placed on the ground for inspection and sorting based on size and visual quality but are packed in sacks, bags, or boxes of mixed quality.[16] Even for exports, the quality of packaging and handling of horticulture products generally do not meet international standards. Typically, cardboard boxes or wooden crates are overfilled, so the commodities are often crushed during transport. As a result, exports

[15] This breakdown does not include potential equipment maintenance expenses that are required per year. In addition, the cost of constant electrification is a major challenge.

[16] Traditionally, the best quality fruit or vegetables are placed at the top of the box to give the impression of excellent overall quality.

are often limited to markets with relaxed international food safety standards such as Pakistan and India.[17] Commodities sold domestically are commonly placed into plastic bags of varying size and transferred to the market or to the side of the road.[18] Some retail packaging does occur domestically for the small number of large supermarkets and for processed products such as potato chips.

1.4.3 Transportation

It is difficult for producers and traders to profitably transport produce to foreign markets. Fresh fruit, which is not precooled, only has a 4–5-day shelf life. Given the high cost of air cargo,[19] more than 90 percent of fresh fruit exports are thus to Pakistan. However, crossing the Pakistan border at Torkham or Spin Boldak can take one to three days depending on the queue at the border crossing. Borders frequently close without warning depending on the security and political situation. Afghan traders generally prefer to use Pakistani trucks and drivers once the consignment crosses into Pakistan, which increases delivery time due to the necessity of reloading.[20] For domestic road transportation, typical shipments costs US$15 per mt per 100km but can be as high as US$50 per mt per 100 km depending on risk. A typical truck carries 15 mt and therefore the average cost for 100 km is US$225. The cost of transportation from Jalalabad to Peshawar, including taxes and duties, is approximately US$200 per mt. This covers the US$23 per metric ton permit charge payable to the Afghanistan Chamber of Commerce and Industries; US$70 per metric ton to Pakistani customs agents; US$5 per metric ton in illegal bribes; and fuel, depreciation, labor, and the margin of the transportation company. Transportation from Kabul or Kandahar to the Wagah border on the Indian side balloons up to approximately US$400 per metric ton, (including 5 percent missing or damaged products). The transportation cost from the Wagah border to the Delhi markets is US$16 per metric ton.

1.5 Processing and Marketing

The processing of horticultural products in Afghanistan is currently limited, although well-developed marketing chains and sources of market information exist. The 40 years of conflict that Afghanistan suffered has decimated Afghanistan's horticultural processing facilities, with the industry recovering only partially since 2001 (Subsection 1.5.1). Marketing chains for horticultural products usually consist of local middlemen, regional traders and wholesalers, and national and foreign traders and wholesalers (Subsection 1.5.2). Due to a number of infusions of funding and technical assistance by donors, producers and traders currently enjoy a multitude of sources for commodity prices and other market data (Subsection 1.5.3).

[17] While it is true that the raisins marked for export are of better quality on average, the quality of the raisins varies per bag and the bags themselves are flimsy and easily damaged. Traders in India suggest they often repackage the products once they arrive in Delhi.

[18] In some cases, consumers may visit the farm directly, where the products are piled into heaps on plastic sheets on the ground.

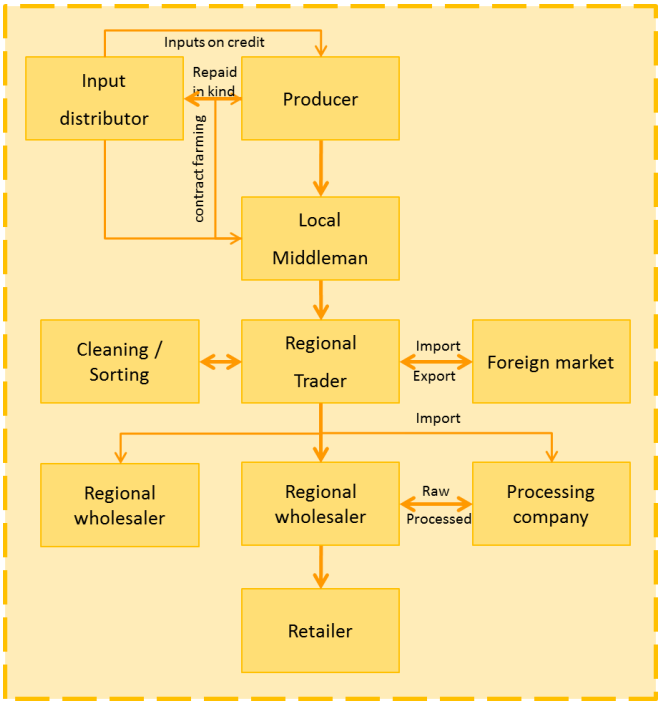
[19] Air transportation to Delhi costs US$600 per metric ton with a maximum allowance of 30 mt per day. A 30 mt consignment costs a foreign importer US$18,000. Very few foreign importers can command enough quantity and have enough local partners to turn a profit using air transport.

[20] To overcome this challenge, traders offer transporters a bonus if they can get their fresh fruit shipment to the Pakistani markets before nightfall on the first day.

1.5.1 Processing

While Afghanistan has a rich history of processing horticultural products, activities are currently limited. In the 1960s and 1970s, Afghanistan had a number of processing plants. A canning plant was built in Kandahar in 1963 to process 40 mt of locally produced fruits per day. In addition, there was one winery in Afghanistan: the Castellino Wine Company of Kabul, which produced 3,000 hectoliters annually. Olives were cured, graded, bottled, and pasteurized in Nangarhar, of which some 650 tons per year were sent to the former Soviet Union. Finally, Afghanistan used to have 31 raisin processing plants, with 17 in Kabul alone. Currently, the primary processing activities undertaken in Afghanistan are drying of fruits (particularly raisins), tomato paste production, fruit juice production, and potato chip production. The largest of these activities, raisin production, is done on an industrial level and on a much smaller scale. Smaller horticulture processing activities include oil pressing, particularly from almonds, as well as some pickling and making of jams.

Figure 4: Horticultural Product Marketing Chain



1.5.2 Marketing Chain

Horticulture products follow a relatively common marketing chain involving local middlemen, regional traders and wholesalers, and national and foreign traders and wholesalers.[21] Retailers of seeds and fertilizers often provide inputs to farmers on credit and sometimes are repaid in kind with a part of the harvest. As such, these distributors can act as intermediaries in the marketing chain. There are several thousands of middlemen and traders operating at the local level directly in contact with farmers and working on their own or on behalf of larger traders and wholesalers. They either purchase the produce at the farm gate at harvest time or contract farmers to purchase their harvest in advance. Two categories of traders can be distinguished. Most traders specialize in a regional market and act as middlemen between producers and local wholesalers, other traders, and/or regional wholesalers, while a smaller number of traders focus on the transit trade between provinces that flows through their locale. There are about 3,000 wholesalers in the five main regional trade centers, in the smaller provincial wholesale markets, and in a few district-level markets. In the main trade centers, several wholesale markets can exist for fresh fruits and vegetables, nuts, and spices. Produce exported to Pakistan and India is generally not sold to a foreign wholesaler, with traders instead contracting an agent who receives a commission.

[21] Middlemen, traders, and wholesalers are distinguished here as functions rather than as individual persons. It is common for the same person to play all three roles.

1.5.3 Market Information

A multitude of sources exist for prices of commodities and market data. The best source of information currently available is the online Paywand Knowledge Management Facility, which lists prices of commodities at the wholesale and retail level, trade flows, market and trade assessments, value-chain assessments on specific high-value commodities, and a repository of studies completed on various agricultural-related topics in Afghanistan over the past decade.[22] Roshan's Malomat is a national agricultural price data system providing farmers with access to wholesale prices of 41 commodities in 14 markets in Afghanistan and 1 in Peshawar, Pakistan. Users access the information by using a mobile phone, either through an SMS or Interactive Voice Response (IVR) technology. The USDA-funded e-Afghan Agriculture online repository grants access to studies, data, and maps that provide provincial information; technical information (fruits, nuts, and so on); and nontechnical information (cultural and logistical information).

1.6 Current Sector Performance

According to key indicators such as yields and exports, the performance of Afghanistan's horticulture sector is improving, although establishing access to higher-value export markets has proved challenging. Over recent years, Afghan farmers have been increasing the amount of land under cultivation while also increasing average yields to levels comparable with neighboring countries (Section 1.6.1). Because of the increased production and the development of transportation infrastructure, Afghanistan's horticultural exports have increased, resulting in substantial gains for traders (Section 1.6.2). Markets for Afghanistan's horticultural exports are concentrated among neighboring countries, with the sector having experienced limited success in developing higher-value export markets (Section 1.6.3).

1.6.1 Yields

Available data indicate that crop areas have been rising faster than crop yields (Table 3)**.**[23] This likely reflects efforts by hundreds of thousands of small-scale farmers to expand their plantings in response to growing market opportunities created by the improvement of road links, increase in the number of traders, and the expansion of nurseries offering a wide range of relatively good-quality planting material.

Table 3: Growth in Production of Top Five Horticultural Crops with Largest Harvest Area

Crop	Area 2015/16 [a] (ha)	Growth in Area 1999–2001 to 2012-2014 [b] (%)	Growth in Yields 1999–2001 to 2012–2014 [b] (%)	Growth in Production 1999–2001 to 2012–2014 [b] (%)
Grape	78,681	2.0	2.9	4.9
Almond	14,676	5.0	4.5	9.6
Apple	13,038	6.8	0.5	7.3
Apricot	9,116	3.9	2.4	6.3
Pomegranate	8,464	No data	No data	No data

Source: b. FAO 2017.
Note: a. CSO 2016b;

[22] Because the system was transitioned to MAIL in July 2012, the system has been irregularly updated.
[23] The quality of subsector data is uncertain. For this analysis, greater emphasis is placed on broad trends in production and trade rather than on the commodity specific data. Most historical data are drawn from FAOSTAT3 databases. Data for the latest two years are drawn from the most recent publicly available databases from Afghanistan's Central Statistics Organization (CSO).

Average yields appear to be moderately increasing. However, a more detailed explanation is needed for the levels and variability of these statistics. In general, current yields, if accurate, appear roughly competitive with those obtained by Afghanistan's main competitors (**Error! Reference source not found.**Table 4). Average yields in more commercialized agricultural systems are higher, but these land productivity levels should allow Afghan producers to be broadly competitive in trade with neighboring countries. Actual competitiveness depends on Afghanistan's relative costs of production, transport, and processing as well as the quality of the marketed product. Productivity per unit of land remains relatively low compared to other producing countries for most crops (Table 4).

Table 4: Comparison of Average Yields for Key Horticultural Crops of Afghanistan and Its Competitors (2012–2014)

Crop	Average Yield in Afghanistan (2012–2014) mt/hectare	Average Yield Among Major Global Competitors (2012–2014) mt/hectare
Grape	9.6	South Africa 16.6, China 16.2, Turkey 8.9, Islamic Rep. of Iran 9.7, Pakistan 4.3
Almond	3.2	China 3.0, United States 4.8, Islamic Rep. of Iran 1.3, Pakistan 2.0
Apple	7.5	China 17.6, United States 35.9, Pakistan 5.8, India 7.0, Islamic Rep. of Iran 11.5
Apricot	10.0	China 4.0, Turkey 7.5, United States 12.7, Islamic Rep. of Iran 17.2, Pakistan 6.3
Pistachio	1.2	Islamic Rep. of Iran 1.3, China 2.9, United States 3.0
Fig	4.0	Islamic Rep. of Iran 2.9, Turkey 5.5, China 5.2

Source: CSO 2016b; FAO (2017).

1.6.2 Export Volumes

The growth of Afghanistan's horticultural crop production has broadly contributed to the expansion of crop exports (Table 5). These export gains have contributed to reestablishing major export flows to regional trade partners. While grape and raisin exports remain well below the levels achieved in the 1970s, pistachio and almond exports have largely recovered their earlier markets. Exports of dried apricots and saffron have sharply expanded. Apple and dried fig exports are relatively new export products. The expanded production for export has also supported the expansion of supplies of these horticultural commodities for the growing domestic market. However, the value of the recent increase in exports is low and, with the exponential expansion of horticultural product markets over the last decades, Afghanistan's market share is a fraction of what it once was. It is equally important to say that considerable portion of the growth in value of exports can be attributed to the increase in average commodity prices.

Afghan traders appear to have considerably gained from a sharp rise in the average value of their exports. The increase in average commodity prices accounts for more than one-half of the increase in the total value of Afghanistan's horticultural exports over the last 15 years. A significant part of this increment corresponds with the rise in average global prices for these commodities in response to income growth and rising consumer demand. This has undoubtedly encouraged the expansion of international production and trade of horticultural products in general, as well as growing competition in these export markets.

Table 5: Growth in Quantity and Value of Top Five Horticultural Crops with Highest Export Earnings

Crop	Export Value 2015/16 [a] (US$, millions)	Growth in Quantity Exported 1999-01 [b] to 2015/16 [a] (%)	Growth in Average Unit Value of Exports 1999–2001 [b] to 2015/16 [a] (%)	Growth in Value of Exports 1999–2001[b] to 2015/16 [a] (%)
Raisin	80.3	3.4	9.7	13.1
Almond	29.2	5.1 (2002 base)	6.6	11.7
Dried Fig	24.6	8.9	6.8	15.6
Pistachio	21.2	6.6	7.9	14.4
Apple	15.9	7.7	7.6	15.4

Source: b. FAO 2017.
Note: a. CSO 2016a.

1.6.3 Export Markets

Export volumes are dominated by flows to India and Pakistan. Overall, about a third of Afghanistan's horticulture crops are exported. Grapes (US$150 million) and raisins (US$280 million) are the first ranked crops in terms of value of exports, followed by almond (US$120 million) and then pomegranates (US$100 million). The majority of exports go to the traditional low-paying markets, while flows to high-end markets have strict requirements in quality certification, limitation on use of pesticides, and traceability programs for products. Well over one-half of the volume and value of all exported horticultural produce—and 90 percent of fresh perishable produce (for example, grapes, apricots, and fresh vegetables)—is sold to Pakistan and India. Sales to a few other neighboring countries (for example, Iraq, the Islamic Republic of Iran, the United Arab Emirates, and Russia) account for the dominant share of the remaining exports. Large quantities of products exported to India and Pakistan are reprocessed and go through cleaning, sorting, and packing and are reexported to high-end markets, representing a lost opportunity for Afghanistan.

Table 6: Distribution of Key Horticultural Exports, 2015/16

Commodity	Percentage Sold to Top Buyer	Percentage Sold to Second Buyers
Raisins	37% India	24% Russia
Almonds	53% Pakistan	39% India
Pistachios	75% India	7% United Arab Emirates
Dried fig	96% India	2% Pakistan
Apples	91% Pakistan	9% India
Fresh apricot	63% Pakistan	30% India
Dried apricot	57% Iraq	12% Pakistan

Source: CSO 2016a.

Afghan traders understand the need to target different types of products to different markets, but a lack of processing undermines product value. Almost one-half of all red raisins are exported to Russia, and a similar proportion of green raisins are sold to India. Most hard and soft almonds are sold to Pakistan, while most shelled almonds are sent to India. Different types of dried apricots are exported to Iraq, Turkey, and Pakistan. Small volumes of high-value crops such as saffron, liquorice, or asafoetida reach the markets in Western Europe or Northern America. However, in the rush to take advantage of export opportunities, they have been pursuing little or no processing of most exported crops. Afghan raisins sold to Pakistan,

India, and the United Arab Emirates require rewashing, resorting, and repackaging in preparation for domestic trade or reexport to the neighboring countries. Similarly, exports of grapes and apricots need to be resorted and repackaged in destination markets for domestic sale. Buyers complain about mixing of of bitter almonds with sweet almonds. These challenges reduce the value of export earnings. Even if the quality of exports improves, Afghanistan's reputation for selling poor or variable quality products creates an uncertainty about product value, which hurts the seller.

Table 7: Destination Markets for Various Commodities

Commodity	International Markets (Distant and High-value markets)	Mode of Transportation	Transit Route	Type of Packaging
Raisin	Europe	Ground	Islamic Rep. of Iran-Turkey	Intermediate and retail
Berry	Germany, Poland, Sweden, United Kingdom, United States, Canada	Ground	Islamic Rep. of Iran-Turkey	Intermediate and retail
Walnut	Europe	Ground	Smuggled to Islamic Rep. of Iran and reexported to Europe through Turkey; Uzbekistan-Turkey	Intermediate
Dried Apricot	Germany, Poland, Sweden, UK, US, Canada	Ground	Islamic Rep. of Iran-Turkey	Intermediate and retail
Pistachio	Australia, New Zealand, Canada, Netherlands	Ground and sea	Karachi Seaport	Intermediate and retail
Pomegranate	Netherlands	Ground and Sea	Karachi Seaport	Intermediate
Almond	Australia, New Zealand, Canada, Turkey, Germany, Poland, Sweden, UK, US, Canada	Ground, sea, air	Islamic Rep. of Iran-Turkey; Karachi seaport; air cargo	Intermediate and retail
Fruit concentrate	England, Netherlands	Ground and sea	Karachi seaport	Intermediate
Pine nuts	European and U.S. markets		Smuggled to Pakistan and reexported (labeled as Pakistani product)	Intermediate
Saffron	USA, Australia, Germany, Spain, France, Netherlands, Germany, Canada	Air	Air-Dubai Cargo, DHL, FEDEX, NTA	Retail
Medicinal plants	Turkey and Europe	Ground and sea	Karachi seaport, Islamic Rep. of Iran-Turkey	Intermediate

Many efforts have been made to expand the sales of Afghan commodities in high-value markets in Europe, North America, and East Asia (Table 8). However, the quantities remain small. Traders report that many shipments were rejected because they did not meet the strict phytosanitary or quality requirements. European and North American authorities demand stricter controls on pest incidence and tighter limits on pesticide residues. Europe has extremely strict regulatory controls for aflatoxin. Horticultural products also need to conform with local consumer preferences, including consistency in the size and appearance of fruits and nuts, favorable taste, and good shelf life. These standards are difficult to meet because Afghanistan's production encompasses large numbers of different varieties produced with variable production methods and harvested in different ways.

Table 8: Relative Importance of Horticultural Exports to High-value Markets, 2015/16

Commodity	Total Exports (tons)	Quantities to Largest High-income Countries (tons)
Black raisin	3,493	Germany 68 Holland 63 Canada 27
Green raisin	6,831	Australia 252 Holland 83 Canada 39 Brazil 25 Belgium 18 Denmark 18
Dried apricot	3,159	Germany 66 Canada 14 USA 12
Almond	5,157	Germany 2 USA 3
Pine nut	326	Germany 13 Hong Kong 7 USA 2

Source: CSO 2016a.

1.7 Policies and Programs

Over the last 15 years, support from the Government and international donors has enabled improvements in Afghanistan's agricultural sector. However, the GIRoA has a limited role in the horticulture subsector, both in the number of institutions and presence across the country and also in its capacity to deliver effective services (Subsection 1.7.1). This notwithstanding, international donors such as the U.S. Agency for International Development (USAID) and the EU have funded a large array of on- and off-budget programs focused on developing Afghanistan's horticulture sector (Subsection 1.7.2). Bilateral, regional trade, and transit agreements are important to Afghan traders as they provide preferential access to new markets (Subsection 1.7.3).

1.7.1 Institutions and Agencies

1.7.1.1 Government Agencies

Afghanistan's Department of Horticulture is constrained by a lack of capacity, resources, and provincial presence and by demands of donors.[24] MAIL's Department of Horticulture is responsible for implementing on-budget programs to develop horticulture,[25] including establishing fruit orchards, facilitating and training farmers on pre- and post-harvesting activities, establishing greenhouses for flower production, designing training manuals, and controlling and monitoring 32 nursery associations across the

[24] The key strategic document for MAIL is the National Comprehensive Agriculture Development Priority Program (NCADP) (2016–2020). With horticulture as the third strategic priority, it emphasizes two areas of strategic focus: (a) perennial horticulture which includes fruits, nuts, and grape products and (b) annual horticulture which includes vegetables, flowers, annual fruits, and specialty crops.

[25] MAIL's total development budget for FY1391 (2012) was US$116 million.

country.[26] MAIL has received limited attention from donors, with many agriculture development projects being run mostly without its intervention. As a result, both MAIL and the Department of Horticulture have several shortcomings. First, technical capacity is limited, which constrains the ability of the department to provide training to farmers on pre- and post-harvesting best practices.[27] Second, human resources within the department are absorbed with fulfilling the requirements of major donor-funded programs. Third, a Department of Horticulture only exists in 6 provinces and the Department's ability to deliver services and gather information in the remaining 28 provinces is limited. Finally, the Department of Horticulture—which was allocated US$235,000 (AFN 13 million) in 2012—lacks the financial resources to execute programs.[28]

Various other units within MAIL provide services of relevance to the horticulture sector. The Directorate of Agricultural Statistics and Management Information Systems (ASMIS) is responsible for collecting, analyzing, and disseminating agricultural data, including on commodity prices. ASMIS only has a presence at MAIL in Kabul and produces production and price data on a regular basis, although there are concerns about data quality. The Agriculture Extension General Directorate is responsible for providing farmers with new knowledge of agricultural best practices and is represented in all provinces and at the district level. The Afghan Raisin, Fruits, and Vegetables Promotion Administration (ARFVPA), a public/private partnership, certifies Afghan horticulture exports using labs in Kabul and Kandahar;[29] provides on-farm education in improved production and harvest techniques; and inspects cleaning, sorting, processing, and packing plants to ensure that the standards needed for export are met. The effectiveness of the ARFVPA is, however, hampered by a lack of awareness of its activities and of the value of certification.

Shortfalls in MAIL's financial and human resources hinders the sustainability of donor programs. MAIL does not have enough operating budget to pay the salaries of the programmatic staff and MAIL *tashkeel* counterparts involved in the programs are not yet able to manage the technical aspects of delivery. Some donor-funded programs have put in place transition plans such as the EU's agriculture sector strategy for 2014–2016, which highlights the need for financial and technical support for its development programs for three years while MAIL learns to put in place sound financial and managerial control mechanisms.

1.7.1.2 Nongovernmental Organizations

Various nongovernmental organizations (NGOs) serve an important role in implementing programs focused on providing services to the horticulture sector. These include the following:

- The **Afghanistan National Horticulture Development Organization** (ANHDO), an Afghan NGO founded in 2009 and supported by the EU-funded PHDP, works to link the public sector with the private sector in horticulture and provide services support in post-harvest value-added activities.

[26] The Horticulture Department has a total of 44 *tashkeel* staff; 20 at MAIL and 24 are stationed at DAIL offices in Kabul, Herat, Kunduz, Nangarhar, Kandahar, and Balkh.

[27] The ministry does not have *tashkeel* staff (civil servants under permanent contract) with the expertise in specialty crops, and given that funds are scarce, high production and high-value crops are prioritized.

[28] While the horticulture subsector benefits from millions of dollars per year from donor-funded initiatives, the Government has little influence over how the money is spent.

[29] The organization provides certification for 109 products and can run tests based on the standards of 49 countries. The agency owns additional labs in Herat and Mazar-e-Sharif, but they are not operational, as they cannot obtain the needed materials to sustain operations. For the time being, samples of produce from Herat are sent to Kandahar for testing and certification, while samples from Mazar-e-Sharif are sent to Kabul.

The ANHDO is linked to a number of partner organizations and government entities such as MAIL, DAIL, the Nangarhar Valley Development Authority, Afghanistan National Nursery Growers Organization (ANNGO), the Afghanistan Almond Industry Development Organization (AAIDO), the Faculties of Agriculture in Kabul, Balkh, Herat, and Nangarhar, international universities, the biotechnology laboratory at Badam Bagh, the Export Promotion Agency, and the Citrus Promotion Group, among others.

- The **ANNGO** was established in 2008 with the support of the PHDP. The ANNGO is the umbrella organization for 32 regional nursery associations from the main fruit tree nursery growing parts of the county. The ANNGO works to improve fruit tree saplings by establishing and maintaining a nationwide fruit tree certification scheme based on international standards. The ANNGO also provides support to members through training in fruit tree production technology and better business practices. The ANNGO is also responsible for maintaining the national stock of saplings, maintaining the biotechnology testing laboratory in Kabul, and building awareness among farmers about the importance of using certified saplings and among consumers in purchasing products of certified high-quality saplings. The ANNGO has 32 sub-nursery associations and thousands of individual nursery members in 22 provinces.

- Across Afghanistan, MAIL estimates that there are more than 2,655 **cooperatives** with more than 35,000 members. According to the ministry, cooperatives now account for more than 950,000 ha of land and have sold nearly 2,000,000 mt of surplus products, and the total shares in cooperatives are worth approximately US$3.7 million. The impact of cooperative farming has been on the rise since 2010, as according to MAIL, surplus sales have increased by more than 3.5 times.

1.7.2 Donors and Programs

1.7.2.1 Multi-Donor Programs

The 2013–2020 **National Horticulture and Livestock Project (NHLP)** promotes the adoption of improved production practices by target farmers, with the gradual rollout of farmer-centric agricultural services, systems, and investment support. The project has two components applicable to horticulture. First, to increase horticulture production and second to implement management and technical assistance support. The NHLP's activities will be implemented in 265 districts in 33 provinces. The NHLP is an on-budget program supported by US$190 million from the Afghanistan Reconstruction Trust Fund.

The World Bank-funded NHLP has enabled more than 220,000 farmers (nearly half of them are women) to adopt modern farming practices and has established around 50,000 ha of high-value crops, such as grapes and pistachio. The project also extended support to the livestock sector by training more than 90,000 farmers on animal health practices, herd management, and vaccinations.

1.7.2.2 USAID-funded Programs

The **Accelerating Sustainable Agriculture Program (ASAP)**, which operated from 2006 to 2011, aimed to help Afghanistan develop a dynamic agriculture system capable of adapting to market forces. The project implemented activities that aimed to (a) increase competitiveness of Afghan agriculture products in domestic and international markets for high-value commodities and (b) improve public policies and institutions in support of more competitive agriculture and agribusiness. Because of its activities, ASAP assisted with US$14 million in exports by opening up the international retail market for Afghan produce. ASAP also provided more than half a million individuals with training on best practices, food safety

requirements, and business skills. The project established 20 provincial AdDepot associations to distribute agriculture goods to workers throughout the country. ASAP created nearly 8,000 full-time jobs, improved an estimated 22,000 ha of crops with new technologies, distributed an abundance of saplings to farmers, and improved water management of 106 km of canals.

The **Commercial Horticulture and Agricultural Marketing Program (CHAMP)**, which ran from 2010 through 2014, aimed to increase yields and produce quality as well as open up global markets for six high-value horticulture commodities grown in central, eastern, and southern Afghanistan.[30] Key activities of the program included (a) establishing new orchards and vineyards and rehabilitating existing ones, (b) linking farmers with traders and traders with domestic and international markets, (c) improving the performance of new and existing businesses by working along the value chain, and (d) providing employment opportunities for women. CHAMP planted more than 2.8 million fruit saplings and grape cuttings; established more than 6,000 ha of fruit orchards and vineyards in partnership with 19,000 farmers; converted 394 ha of traditional vineyards to trellising; trained more than 88,000 farmers (1,400 women) on improved agriculture techniques; generated nearly 6,000 full-time jobs in areas such as pre-harvest and post-harvest handling and exporting; and facilitated the export of more than 7,000 mt of fresh fruit, dried fruit, and nuts with an estimated value of US$6.5 million to international markets, including Pakistan, Bahrain, Canada, India, Russia, the United Arab Emirates, and Saudi Arabia.

AGRED, which ran from 2012 to 2016, focused on providing research and extension systems to increase agricultural productivity and income. AGRED delivers services directly to Afghan farmers in coordination with MAIL and DAIL to build institutional and human capacities of the Government to deliver services in the future. Although the program has a broader scope than just horticulture, research and extension services are provided to MAIL and DAIL representatives as well as to farmers who work on and/or produce horticulture crops. AGRED has operated in 26 provinces across the country.

1.7.2.3 EU-funded Programs

The 2006–2017 EU-funded **Afghanistan Horticulture Program** (formerly the PHDP) focuses on developing the valuable fruit germplasm of Afghanistan, providing good mother plants to the private fruit nurseries, and establishing a system of traceability that ensures the quality of planting materials. The Afghanistan Horticulture Program has established six national collections of fruit variety centers in Herat, Jalalabad, Kabul, Kandahar, Kunduz, and Mazar. The program also supports MAIL in providing services to the horticulture industry and supports the private nursery industry, including imparting greenhouse technology to reintroduce certified saplings and seedlings native to Afghanistan for production that meets international export standards. The PHDP also successfully established the ANNGO and the ANHDO.

1.7.2.4 USG- and USDA-funded Programs

The **e-Afghan Agriculture** online repository, which ran through 2014, was funded by USDA and implemented by the University of California at Davis. The project created an online repository to provide credible and relevant information to a variety of actors (USDA, USAID, Agribusiness Development Teams, Provincial Reconstruction Teams, NGOs, and so on) assisting farmers in Afghanistan. More than 50 organizations have contributed to the online repository by submitting studies, data, maps, and other sources of information. Included on the site are provincial information; technical information (fruits, vegetables, nuts, and so on); and nontechnical information (cultural and logistical information). The repository is being used by AGRED and AAEP implementers to extend training to civil servants and farmers

[30] These are pomegranates, apples, almonds, grapes, apricots, and melons.

across the country. The University of California at Davis has also developed an online source of information specifically geared toward Afghans in Dari and Pashto.

The 2012–2014 **Agriculture Data Collection and Utilization System (ADCUS)** program sought to strengthen the ASMIS Directorate at MAIL to collect, analyze, and disseminate credible agricultural production data on a national scale and funded a comprehensive national horticulture survey for MAIL in the summer of 2014.

The 2012–2014 **AAEP** is similar to AGRED in that the primary focus is to assist MAIL and DAIL to deliver more effective extension services to producers. AAEP operates in four provinces: Kabul, Herat, Balkh, and Nangarhar. The program imparted extension agents at MAIL and DAIL with improved technical knowledge and appropriate methodologies to provide extension services. A number of specific training courses have been provided along with practical opportunities to interact with rural farmers, with the support of the implementing partners. Training manuals and educational materials have been created based on high-priority needs, and agricultural universities, vocational high schools, and technical institutes have increased capacity to prepare future extension personnel.

The USG-funded **Agricultural Credit Enhancement (ACE)** program focuses on providing access to finance for Afghan farmers, traders, and agribusiness entrepreneurs. The farmers repay their loans after their harvest. ACE also provides technical assistance so that farmers and others, who borrow from the ADF, have a better chance to succeed. Moreover, loans are provided to processors and exporters. The fund functions as a wholesale lender, channeling credit through local Afghan financial and nonfinancial institutions. To date, ACE has processed more than US$77 million in loans to 21,000 small commercial farmers in 31 provinces. The default rate is below 5 percent. Other programs, including the International Fund for Agriculture Development's Rural Microfinance and Livestock Support Program (RMLSP) and traditional financial institutions such as First MicroFinance Bank (FMFB) also provide microfinance to individuals and organizations operating in the horticulture subsector.

1.7.3 Transit and Trade Agreements

Bilateral, regional trade, and transit agreements are important to Afghan traders as they provide preferential access to new markets. They facilitate increased regional cooperation and connection to Central and South Asia. Afghanistan is a member of regional associations that work on strengthening cooperation in trade, transit, and transportation, such as the Economic Cooperation Organization (ECO), the Central Asia Regional Economic Cooperation (CAREC), and the South Asian Association for Regional Cooperation (SAARC). The Afghan MOCI is seeking to strengthen and expedite the implementation of these existing trade agreements.

1.7.3.1 Afghanistan-Pakistan Transit Trade Agreement

In 2010, APTTA replaced the Transit Trade Agreement of 1965. APTTA facilitates transit trade for Afghanistan and creates a gateway for Pakistan's transit trade to Central Asia. Under APTTA, Afghanistan gains access to Indian and Chinese markets through access to seaports and land border crossing points.

1.7.3.2 Cross Border Transport Agreement (CBTA)

Afghanistan is a signatory of the CBTA between Afghanistan, Kyrgyz Republic, and Tajikistan. According to the provisions of the CBTA, a Transport and Trade Facilitation committee was to be established and even work on the extension of APTTA to the Pakistan-Afghanistan-Tajikistan Transit Trade Agreement (PATTTA).

1.7.3.3 International Road Transport

Transit International Routier (TIR) is an international customs transit system for goods carried by road. This facilitates international movement of goods across the borders of countries that have ratified the TIR Convention while simultaneously offering a high level of security. The TIR system enables door-to-door transport with minimum interference at the international borders of contracting parties to the TIR Convention. Despite being a signatory of TIR, Afghan traders still face challenges at international borders. In addition, corruption, unhelpful officials, and unnecessary inspections were also reported. One firm stated that "its dry fruit shipment is usually stopped in Bulgaria for no valid reason. Bulgarian authorities claim that dry fruits shipments are supposed to be tested in Bulgaria before they reach final destinations. This is against the transit norms."

2 Diagnosis

Horticultural producers and partner agencies perceive that they are most constrained by trade barriers that inhibit access to high-value markets. To identify the main constraints limiting the growth of the horticultural sector, in-depth interviews were conducted with 35 agribusiness firms and 15 government and nongovernmental agencies linked with the horticultural sector in late 2016 (Table 9).[31] In general, respondents were much more concerned about constraints to expanding agro-processing and trade than raw material supply. Traders commonly noted their willingness to invest and interest in expanding investments if they could more reliably access higher-value markets. Investments would also expand if traders and agro-processors could gain better access to electricity and, in some cases, land for primary production. While security is a concern, businesses commonly view this as an environmental factor beyond their control. Complaints about taxes largely reflect concerns about uncertainties and inconsistencies of tax administration. Problems of transport have declined with falling fuel prices, though traders commonly complain about demands for bribes at a growing number of roadblocks. Surprisingly, investment and trade finance and human capital are not viewed as major investment constraints. This implies that investment can expand if market opportunities allow.

Table 9: Types of Business and Geographical Locations

Type of Business	Location of Firms					Total
	Herat	Nangarhar	Kabul	Kandahar	Balkh	
Dry fruit traders	2	1	5	4	5	17
Fresh fruit traders	—	1	4	3	1	9
Processing companies	1	2	1	—	—	4
Saffron traders	4	—	—	—	—	4
Seeds producer/exporter (vegetable and wheat)	—	—	1	—	—	1
Grand Total	7	4	11	7	6	35
Date of Establishment	**Capital in US$, millions**					**Total**
	Dry Fruit	**Fresh Fruit**	**Processing**	**Saffron**	**Seeds**	
Before 2001	63.20	11.40	0.00	0.00	0.00	74.60
2001 to 2007	13.30	11.70	5.10	10.00	0.00	40.10
2008 to 2016	1.50	10.00	47.00	4.55	5.00	68.05
Total	78.00	33.10	52.10	14.55	5.00	182.75

The following sections provide further information on the nature of the constraints identified by horticultural firms. These include the business environment (Section 2.1), which encompasses border and transit constraints, standards and certification, taxes, and insecurity and political uncertainty; infrastructure (Section 2.2), which encompasses transportation and access to serviced land; human

[31] APEX2 2017. The commercial firms were semi-purposefully selected from a list of 180 companies to represent relatively larger horticultural commodity traders and agro-processors operating across five regions of the country (center, east, west, north, and south). These included firms trading fresh and dried fruits, nuts, and saffron, as well as one vegetable seed seller. The majority of firms were family businesses established before 2001. However, a significant portion of the sample started investing in horticulture after 2008.

capabilities and technology (Section 2.3), which encompasses production and post-harvest activities, compliance with quality standards, and knowledge of export markets; and financing (Section 2.4).

2.1 Business Environment

Various characteristics of Afghanistan's business environment severely constrain the ability of famers and traders to exact full value from horticultural production. Traders seeking to export produce from Afghanistan incur high transport costs not just because of the country's landlocked status but due to closures of the border with Pakistan, requirements to off-load trucks at border crossings, and irregular roadblocks and other illegal demands for fees and bribes (Subsection 2.1.1). Another key constraint on the ability of producers and traders to exact value from exports is the poor reputation that Afghan produce has garnered due to the lack of a robust and respected standards and certification regime (Subsection 2.1.2). While Afghanistan's tax rates are in line with other countries in the region, the irregularity of taxation—and frequent demands for bribes—undermine the profitability of producers and traders (Subsection 2.1.3). Finally, the prevailing insecurity and political uncertainty substantially increase the risk of investments, which causes producers and traders to focus on short-term trading gains rather than building value (Subsection 2.1.4).

2.1.1 Border and Transit Constraints

The cost of exporting horticultural products from Afghanistan is very high as a result, not just because of the country's landlocked status but also because of various inefficiencies affecting border transit. Respondents noted, with particular frequency, the adverse effects of such inefficiencies on the profitability of horticultural production. This result aligns with findings from the 2014 Enterprise Survey, which found that 47 percent of firms in Afghanistan perceive customs and trade regulations to be a major constraint on business as compared to an average of 17 percent of firms in the region and in the developing world.[32] Respondents to the Afghanistan horticulture survey cited three characteristics of Afghanistan's border crossings that particularly increase the costs of exporting products from Afghanistan.

Border Closures

Unpredictable border closures particularly affect trade through Pakistan, including trade to India and international trade flowing through the Pakistani port of Karachi. In the most recent instance, the border crossings at Torkham (Nangarhar) and Spin Boldak/Chaman (Kandahar) were closed by the Government of Pakistan between February 16 and March 20, 2016, following a suicide bombing at the Shrine of Lal Shahbaz Qalandar in Sehwan, Pakistan. In another instance, the border at Spin Boldak was closed for 16 days in 2016. The border at Wagah between India and Pakistan is also frequently closed due to political disputes, which affects the transit of Afghan goods to India.

Such closures increase spoilage of perishable commodities and thereby reduce incentives for farmers to grow and trade perishables. Traders are also prone to losing contracts for the supply of nonperishable commodities that have been voided by late delivery. For instance, one trader reported that the "closure of Torkham border . . . delayed for 20 days my loaded vehicle [shipment of almonds and pistachios to India] and as a result of which the deal with the Indian importer was terminated because of late delivery." Another firm reported that "it lost US$150,000 because its shipment of apples and grapes spoiled due to closure of Waga port."

[32] http://www.enterprisesurveys.org/data/exploreeconomies/2014/afghanistan#trade--sector.

Cross-loading

Traders also complain about losses associated with unnecessary demands for off-loading and reloading of trucks. In some cases, these demands are made for inspection purposes particularly if bribes are sought. But in many instances commodities are being shifted to trucks of the nationality of the receiving country.

For instance, at the Afghanistan/Pakistan borders, some firms reported that Afghan trucks are not permitted to reach their final destinations within Pakistan. Trucks must be unloaded at the border and reloaded onto Pakistani trucks. The same situation has been reported at borders with the Islamic Republic of Iran, which does not allow Afghan trucks to enter the country. Consequently, shipments of raisins, berries, dry apricots, almonds, and medicinal plants are primarily reloaded at Islam Qala onto Iranian trucks and transported to Europe through Turkey.[33] This practice damages the overall quality of the exported commodities, including packaging and labeling, and increases the rates of spoilage for perishable items. Similarly, while goods from Uzbekistan are shipped directly to Afghanistan by train, Afghan horticulture shipments of raisins and fruit concentrate that go through Uzbekistan (to Russia, Siberia, Kazakhstan, and Kyrgyz Republic) are reloaded onto Uzbek ships that ferry the cargo only a few meters to the Afghan-Uzbek border (at Hairatan) and then reloaded onto Uzbek trains (in Termiz) to reach their final destination. This adds to the overall cost and increases the chances of spoilage due to high humidity. One firm claimed that the entire process takes about 20–25 days.

Afghanistan, Uzbekistan, and the Islamic Republic of Iran are each signatories of the TIR agreement which should allow free transport, while APTTA also allows the movement of each country's trucks across the others borders. However, these agreements are not being consistently implemented, leading to commodity spoilage, theft, and trade delays.

Customs Procedures

Customs clearance procedures have improved at Afghanistan's major ports and are not considered a major constraint. This is borne out by data from the 2017 Doing Business indicators, which report that the time and cost of complying with border crossing procedures required to export horticultural produce at the Torkham border crossing—48 hours and US$453, respectively—are now close in line with the average for South Asian countries.[34] Data from the 2014 Enterprise Survey similarly indicate that the average number of days required for Afghan exports to clear customs (8.1 days) aligns with regional (8.7 days) and international (7.7 days) averages.[35]

Nonetheless, limited processing capacity slows shipments at minor border points. The Aqina border post, for instance, can take 25–30 minutes to clear one vehicle and therefore lengthy queues—which cause delays and also lead to security threats—are not uncommon. Truckers are also still prone to unexpected demands for documentation and bribes and complain about small fees demanded at a growing number of roadblocks within Afghanistan and across neighboring countries. They also complain about demands for unknown or nonexistent paperwork. One company reported that because the name of the importer on the certificate of origin was handwritten, Indian authorities seized its commodities at the Delhi airport. Afghan traders also report unnecessary delays, such as customs officials asking for documentation that is not required or does not exist, at the Karachi port. As recounted by one firm based in Kabul: ". . . my onion shipment [to Kuwait] was delayed for 26 days in Karachi seaport. Pakistani officials kept asking for

[33] Afghanistan walnuts and sesame seeds are two horticulture products which Islamic Republic of Iran has banned from import.

[34] For South Asian countries, border compliance for exports takes 59 hours and US$376, on average. http://www.doingbusiness.org/data/exploreeconomies/afghanistan#trading-across-borders.

[35] http://www.enterprisesurveys.org/data/exploreeconomies/2014/afghanistan#trade--sector.

certificate confirming that the shipment does not include illegal drugs. Such certificate in fact does not even exist. As a result, all my onions went bad."

The problems created by multitudinous documentary requirements are reflected in the 2017 Doing Business data, which demonstrate that the time and cost of complying with documentary requirements for export—228 hours and US$344, respectively—are considerably more burdensome than procedures at the border and South Asian averages.[36]

The combined impact of these border and transit difficulties is that it raises the costs and risks of horticultural trade. This lowers the levels of prices that can be paid for commodity at the farm gate and reduces incentives to invest more in sorting and processing needed for higher-quality products. Trade in more valuable perishables (for example, grapes and apricots) is diminished in favor of trade in lower value nonperishables (for example, raisins and dried apricots). The pursuit of supply contracts with stricter delivery deadlines is discouraged in favor of deliveries for sale to uncertain markets. The effect of these difficulties across the economy generally are borne out clearly in the 2014 Enterprise Survey, which reports that just 11 percent of firms in Afghanistan export directly or indirectly, as compared to 19 percent of firms across the region and 30 percent across the developing world.[37]

2.1.2 Standards and Certification

Afghanistan's standards and certification regime is rudimentary and lacks infrastructure required to test for key sanitary traits. Phytosanitary certificates are widely demanded in international trade as a means to control the spread of seed and fruit borne pathogens. However, traders in Afghanistan complain that these certificates are commonly provided with little or no inspection of their traded lots and are thus apparently not linked with recognized quality standards. Tests for foreign matter (for example, dirt, sand, and stems) appear to be inconsistently applied. Moreover, Afghanistan currently has no capacity to test for key quality traits required by higher-income buyers, such as pesticide residues and aflatoxins.

Due to a lack of compliance, Afghanistan's standards and certification regime lacks credibility in international markets. Due to widespread practices of deceptive packaging and poor-quality products, horticultural products from Afghanistan appear to have gained an unwelcome reputation. Traders report that it is not uncommon for Afghan horticultural products to be partially or fully rejected due to quality concerns. For instance, some of the interviewed firms reported that their consignment of raisins, pistachios, and pomegranate juice concentrate had been rejected at destination markets (Saudi Arabia, United States of America, Italy, and the United Arab Emirates) after testing positive for harmful substances such as embedded sand, pest residue level, crystallization, mold, stem pieces, and high mycotoxin and aflatoxin levels. One company complained:

"My two containers of raisins were rejected by Saudi Arabia, and I lost US$11,000."

Another company reported:

"A German importer ordered for certified wild organic pine nuts, I failed to fulfill that order, due to non-existence of such certifications [in Afghanistan]."

[36] For South Asian countries, documentary compliance for exports takes 78 hours and US$183, on average.
[37] http://www.enterprisesurveys.org/data/exploreeconomies/2014/afghanistan#trade--sector.

One food processing company reported the rejection of its 400 bottles of pomegranate concentrate syrup in Dubai port due to the existence of particles and high pesticide residue levels. For the same reason, one firm based in Kandahar was blacklisted in the United Arab Emirates. Similarly, a key informant shared his experiences:

"I was part of the evaluation team of a failed project in which pomegranates were exported to Singapore where I learned that two containers were rejected in 2010 because of high pesticide residue levels."

It is also not uncommon for neighboring countries to recertify, repackage, and reexport Afghan products under their own brand names to high-value and niche markets. One of the interviewed firms reported:

"The place where I sell my produces (Pakistan) does not need Quality Certificate. Pakistani traders who purchase from me obtain the needed certificates such as ISO and then reexport our products to the international markets under Pakistani trademark."

While the Control Union (CU) has sought to initiate the construction of stricter quality control systems, most traders are unwilling to pay for these services. Due to a lack of reliable certification, laboratory results from within Afghanistan are generally not accorded credibility by wholesale and retail purchases, which in turn reduces the willingness of producers and/or traders to pay the cost of developing stricter quality control systems. The CU, which specializes in certification of organic agriculture, food safety, and agriculture best practices, issues globally accepted certificates. However, Afghan exporters are not interested in spending money on certification and do not value these certificates. The CU also echoes Afghan traders' complaints that there is no laboratory in Afghanistan for standard food safety tests. It suggests sending samples to be tested in Indian CU-certified laboratories as the best option in the short run. Some firms, nevertheless, understand the importance of testing commodities for pesticide residue levels. One firm reports that, "it established a research farm of its own and conducts various types of tests and experiments on its products" to obtain the level of product quality that meets the requirements of the export market.

Afghanistan currently issues two types of certificates: phytosanitary and quality.

Phytosanitary Certificate

After World Trade Organization (WTO) accession, the Afghan Parliament passed the quarantine law which has yet to be published by the Ministry of Justice. The Plant Protection and Quarantine Department (PPQD) at MAIL issues phytosanitary certificates. Phytosanitary certificates are required by the Afghan customs for all horticulture exports regardless of whether it is required at the destination market or not. The official fee to obtain a phytosanitary certificate is AFN 100, whereas the majority of the firms interviewed reported paying up to AFN 1,000.

The process of obtaining a phytosanitary certificate is to formally apply, in the form of a written application, along with a packaging list and invoice of the shipment, at least ten days before the shipment date. After a formal application from the exporter is received by the PPQD/MAIL, staff visit and physically examine the commodities. A phytosanitary certificate is issued after this physical examination has been successfully conducted and an official fee of AFN 100 has been paid. On the contrary, in practice, firms do not feel compelled to request issuance of this certificate ten days in advance, and in most cases, the PPQD does not physically examine the consignments. An exporter or his agent will reach out to the PPQD with a written request and pay up to AFN 1,000, to obtain the certificate within hours without any physical inspection.

A vast majority of the firms interviewed believe that a phytosanitary certificate is only a formality because no physical tests are conducted. The FAO's report of MAIL's PPQD also confirms that issuance of a phytosanitary certificate involves only a visual test of the commodities. Nevertheless, some of the traders based in Northern Afghanistan consider the certificate as globally accepted, while others reported it to be a requirement for destination markets such as Russia, India, and Pakistan.

Quality Certificate

This study found that different agribusiness companies obtained quality certificates from different entities such as the Ministry of Public Health (MoPH), the MOCI, and even from the Afghanistan Chamber of Commerce and Industry (ACCI). According to the FAO's evaluation results, issuances of quality certificates overlap the jurisdictions of many entities such as MoPH, MOCI, ACCI, Afghanistan Investment Support Agency (AISA), MAIL, and Afghanistan National Standards Agency (ANSA). None of these agencies have enough resources (human or monetary) nor are they equipped with standard laboratories to test the quality of the horticulture produce exports and imports. However, firms report that certificates obtained from any of these entities will meet the requirements of the Afghan customs and some importing countries such as Pakistan and India.

2.1.3 Taxes

Afghanistan tax law imposes four major types of taxes on businesses in Afghanistan: Business Receipt Tax, Income Tax, Property Rent Tax, and Employee Salary Withholding Tax. Additionally, a 20 percent tax on interest dividends, royalties, prizes, rewards, lotteries, gratitude (*baksheesh*), and service charges is also levied (but rarely collected). See the following paragraphs for further information about the different types of taxes.

Business Receipt Tax

Business Receipt Tax (BRT) is a tax collected from total services or sales income, before any deductions, of legal persons who provide goods and services in exchange for payment (in either money or in goods and/or services). BRT paid is considered to be an ordinary and necessary expense of doing business and is therefore deductible from gross income when computing taxable income for the year. The BRT rate is 4 percent to be paid quarterly. Afghan horticulture exports are exempt from customs duty. Nevertheless, traders are supposed to pay a 2 percent fixed tax on the value of exports which are to be treated as advanced payment toward BRT. Some of the interviewed firms confused this 2 percent advance payment toward income tax liability with an illegal tax.

Table 10: Tax Types

Type	Rate	Note
Fixed tax	2% of (customs duty + customs value) or 3% of (customs duty + customs value) if the trader does not have a business license	Applied on all exports and considered as advance payment toward the trader's income tax liability
BRT	2% of (customs duty + customs value)	Cannot be claimed as credit

Almost all firms confirmed paying BRT each quarter, which is in accordance with the law. A great majority of the firms complained about the frequency of the BRT payments because they require time and manpower to handle. As stated by one firm,

"The quarterly tax has negative effect on the company since most traders do not have enough time to submit their three-month balance to the government. The company states that they are punished with heavy penalties if they do not clear taxes [on] quarterly [basis]."

Similarly, another firm claims that:

"The quarterly tax creates a big problem for the company since it takes 15–20 days to prepare the documents. They need a commissioner to follow up on the tasks [related to this quarterly clearance]. The company says that it has hired one employee just to follow up on the quarterly tax which increases the total costs of the company."

Income Tax

According to Afghanistan Tax Administration Law, income tax applies to all legal persons and all legal entities. Individuals pay a marginal tax rate, while legal entities pay a 20 percent tax rate on net profits. Table 11 shows how business firms are supposed to calculate their income taxes.

Table 11: Income Tax Calculation

Particulars
Profit according to Profit and Loss Account (A)
Add: Depreciation charged in Profit and Loss account
Add: Expenses not allowed to be claimed
Less: Depreciation according to income tax
Less: BRT
Less: Income exempt from tax
Profit according to Taxation Laws (B) (Taxable income)
Income Tax @ 20% of B

A majority of the firms interviewed reported that they have paid the 20 percent income tax. How the total income is calculated depends on the negotiating skills of the firm's agent (mostly a commission agent) and the amount of corruption involved. Most firms hire commissioned agents to file their tax returns. Businesses pay an absolute amount of tax agreed by the agent and Ministry of Finance officials. Most of the Afghan firms interviewed maintained their books through traditional cash-based book keeping, whereas article 42 of the income tax law states that "corporations and limited liability companies shall compute their income using the accrual method of accounting which recognizes income and expense when due."

Property Rent Tax

According to applicable tax laws of Afghanistan, a tenant has to withhold the amount of tax applicable on the rent paid to a landlord. The withholding rates are shown in Table 12.

Table 12: Tax Withholding Rates

Rent (per month)	Tax Rate (%)
Rent from AFN 10,000 to 100,000	10
Rent above 100,000	15

Fifteen firms interviewed during this study reported that they operate from rented or leased facilities while very few of these reported actually paying or withholding rent tax.

Salary Withholding Tax

According to the current tax law, a firm has to withhold its employees' salary tax. A great majority of the firms interviewed during this study were not even aware of these withholding taxes. While some firms reported that they could only negotiate net salaries with their staff, other firms had to pay the taxes on their behalf. Individual income tax rates which are to be withhold are shown in Table 13.

Table 13: Salary Withholding Rates

Income	Marginal Tax Rate
From AFN 0 to 5,000	0%
From AFN 5,001 to 12,500	2%
From AFN 12,501 to 100,000	10% + AFN 150 fixed
From AFN 100,001 and above	20% + AFN 8,900 fixed

The uncertainty—rather than the average level, per se—of the incidence of taxation on trade in horticultural products represents a significant burden for producers. Numerous firms interviewed for the study reported concerns about inconsistencies in tax incidence and of perceived corruption in tax administration. In particular, firms reported that tax rates often depend upon the firm's ability to negotiate an agreement with corrupt tax officials. Most firms reported that they hire commission agents to calculate their taxes and negotiate their tax liability with tax collectors from the Ministry of Finance. Three-quarters of the firms reported incidences of corruption during the tax clearance process. Businessmen cultivate friendships with tax collectors, using bribes, so that they could underreport their taxable income. This ultimately leads to discrimination against competing traders. One firm claimed:

"[Firm's] fundamental problem is the tax inspection and tax system. Tax collectors after taking bribes report tax returns of some of firm's low, where those who pay full taxes [levied on real income reported], increases their products prices, and competition which is a principle in trade is marred and traders cannot compete fairly."

Generally, firms lack awareness about existing tax laws. This includes the types of taxes, the applicable rates, eligibility criterion for exemptions, and the formulae to calculate it. Unhelpful and corrupt officials take advantage of this lack of knowledge and complexity of the system and try to exploit businesses for their personal monetary gains. During the interviews, one firm complained:

"Provincial finance department calculated my total income tax to be AFN 940,000, which I was willing to pay, but the tax inspector offered me to split this amount into three, where one share goes to me [tax inspector], one goes to government and one to you [businessman/firm]. I replied negative, but then tax inspector recalculated my tax, where my tax was elevated to AFN 1240,000 instead."

The main reason for confusion on the part of such firms was the lump sum amount agreed to by the commission agent on behalf of the firm, regardless of the real income. Some companies also complained of not being able to find resources where they can educate themselves about the tax system and rates and learn how to calculate their tax returns. One firm proposed that, "the government should provide a precise and comprehensive manual to the merchants so that they understand the value [rates] and time [payment deadlines] for paying tax."

The uncertainty of taxation on domestic and international cargo reduces the profitability of trade in horticultural products. Firms additionally complain about uncertainties and associated corruption governing transport and border fees. Municipalities are authorized to collect fees per ton of traded commodity. However, traders report that receipts are rarely provided for these payments, the levels of

payment are subject to negotiation, and in some cases payments are made to police checkpoints to avoid municipal taxes. The confusion about these fees is multiplied by the growing number of police checkpoints demanding payments to allow commodity movements along highways and across cities.[38] In general, the costs and nuisance created by the frequent need to negotiate tax and fee liabilities may be larger than the costs of the taxes themselves.[39] Some of the companies whose shipments are exempted from customs tariffs claim that they have been paying moderate bribes to customs official to process their shipment documents without unnecessary delays. One firm reported:

"The company pays 2,000 Afghanis for processing the documents of one vehicle at customs. According to the company, although it has less affect [on company itself] but it affects [prices for] the buyers [or final consumers]."

Another exporter reported:

"The company pays money as bribe in addition to customs tax [fixed 2% BRT] at Torkham border. If they do not bribe the officials, then they are going to delay their tasks [shipment/processing of documents]."

Many firms reported paying illegal taxes to police at police checkpoints on highways and while entering cities. One firm reported:

"Police are taking 500 Afghanis from each vehicle without giving them any receipt [or justification] and if someone ask them why they are doing this they [mind negotiating and] double the amount to 1,000 Afghanis."

While municipalities can legally collect municipality fees per tonnage or on a per carton basis, many traders noted having to pay illegal taxes to municipalities whenever they entered a new province. Other firms also confirmed paying similar amounts of money illegally at police checkpoints to avoid legal municipality fees, which is often higher than what they pay at police checkpoints. One firm reported that when a truck enters Mazar City, it has to pay AFN 500 for unknown reasons and without a proper receipt. The municipality charges AFN 1 per kilogram in Mazar City. Another firm based in Kabul reported that when it transports its horticulture products from one side of Kabul to the other (from west to east), it has to pay AFN 3,000 at police checkpoints along the way. Other firms also reported illegal taxes paid to local warlords and having to pay 10 percent to the Taliban in Taliban-controlled areas.

The concerns expressed by producers and traders of horticultural products about inconsistency in taxation reflect those of producers and traders generally. Data from the 2017 Doing Business survey indicate that Afghanistan's *de jure* tax regime is generally less burdensome than those of other countries in the region. Specifically, whereas producers in Afghanistan are estimated to be faced with 20 payments a year on average, producers in South Asia generally face an average of 32 payments.[40] The estimated

[38] According to a key informant who traveled from Kabul to Wagah by truck, the total amount of illegal payments ranged from US$200 to US$500. The exact amount depends on how the truck driver bargains with the checkpoint authorities. It is reported that there are more than 25 checkpoints along the way that collect money from transporters. Similarly, a different key informant reported that Afghans have to pay US$600 to road checkpoints between the Iranian border at Islam Qala and the Iranian port of Bandar Abas. Another company reported that, "if it does not pay US$200 to Iranian border police, they would unload the entire truck for inspection, which takes days [even if final destination is not Iran]."

[39] One exception to this is the export of pine nuts to Pakistan. One company interviewed reported that, "Pakistan is taking PKR 30,000 custom tax for each [100 kg] parcel of pine nut."

[40] http://www.doingbusiness.org/data/exploreeconomies/afghanistan#paying-taxes.

amount of time required to prepare taxes in Afghanistan (275 hours per year) aligns with the regional average (284 hours).[41] However, the total tax rate as a percentage of profit is higher in Afghanistan (48 percent) than in South Asia generally (41 percent). Moreover, the 2014 Enterprise Survey reports that the percentage of Afghan firms that report tax rates and/or tax administration to be a major constraint on business is much higher in Afghanistan (44 percent and 37 percent, respectively) than in South Asia generally (26 percent and 21 percent, respectively) or in the developing world generally (30 percent and 21 percent, respectively).[42]

2.1.4 Insecurity and Political Uncertainty

Overall security conditions are deteriorating in Afghanistan. The worsening security situation has affected the local economy and agribusinesses are no exception. However, the impact to their business operations is only minor. Personal networks and connections of businesses with local leaders and those with influence is a success factor for firms which operate in unsecure areas. However, political uncertainties and lack of security may negatively affect current and potential foreign direct investment in Afghanistan. The withdrawal of international forces and shrinking of construction and logistic services resulted in a focus on investments in horticulture. Several firms furthered their investment by bringing in modern machinery. When asked about the impact of political uncertainly and security conditions on business operations, one of the firms' response was,

"[I] perceive political and security uncertainty as negative factor for all investment and businesses but not to the extent to refrain me from business. My investment in machinery has increased in the last two years, which I call a calculated risk for being Afghan investor."

An agribusiness firm based in southern Afghanistan "rejected the idea that investment in agribusiness have decreased in the last two years…it has increased as other sectors such as construction and logistics are not doing well."

Although the majority of respondents do not consider security and political conditions as a serious threat or impediment to their business operations, their businesses have in fact been affected one way or another. Taking into account the impact of security conditions on business operations in various regions of Afghanistan, the findings show that firms which operated in the central, southern, eastern, and western regions were not significantly affected. Nevertheless, the ongoing insurgency and lack of security have contributed to higher operating costs for businesses by heavily relying on middlemen for sourcing commodities in insecure areas. Firms operating in northern Afghanistan reported the negative impact of deteriorating security conditions on their business operations. The firms' inability to source and purchase commodities in insecure areas led to a decrease in their export volumes and higher operating costs. Also, there were instances in which firms incurred losses. For example, one firm's almond and pistachio processing plant was destroyed last year during the war in Kunduz. With regard to the changing security conditions in northern Afghanistan, one company owner stated:

"The ongoing insecurity in northern Afghanistan constrained their procurement in [now insecure] districts where they previously used to obtain [commodities]."

Another company reported:

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[41] http://www.doingbusiness.org/data/exploreeconomies/afghanistan#paying-taxes.
[42] http://www.enterprisesurveys.org/data/exploreeconomies/2014/afghanistan#regulations-and-taxes--sector.

"The insecurity compared to last year has increased especially . . . if the government does not address the issue they will transfer its investment outside [Afghanistan]."

Firms consider crime as an inherent risk and challenge to the business community in Afghanistan, particularly to the wealthy class. Investors are normally aware of the risks of running a business in Afghanistan. This study uncovered cases of threats to life, failed kidnapping, and theft among the firms. One of the firms based in eastern Afghanistan reported, "there was failed kidnap attempt on the owner's son." Another company owner, unwilling to share the reason, received life threats for visiting his farm.

In addition to security concerns, firms are concerned about the capacity of the Government to respond to their needs. Firms cite examples, for instance, of apparent corruption in the award of government contracts and the allocation of land, increases in the number of unnecessary roadblocks, the low value of phytosanitary and quality certificates that is perceived to be low even as costs are rising, and confusion over the appropriate levels and procedures for tax collection.

Insecurity and political uncertainty appears to encourage a focus on trade volume over quality and reduces the willingness of firms to undertake long-term investments. Concerns about growing insecurity undermine the willingness and capability of firms to develop stronger commercial relationships with identifiable sets of producers. Traders are more likely to use middlemen to buy commodities and are less likely to invest in building contractual relationships needed to improve product quality at the farm gate. Insecurity and political uncertainty appears to cause businesses to take a shorter-term view of these opportunities. This reinforces emphasis on trade volume over quality and helps explain the limited interest in investing more in quality control systems needed to build supply chains to new markets. Firms are more likely to walk away from opportunities to build trade flows for new types of apples or pomegranates to new markets rather than investing in slowly building these supply chains over time.

2.2 Infrastructure

Afghanistan's poor transportation infrastructure and unreliable utilities further constrain the development of processing industries and of export markets. The profitability of internal and international trade in horticultural products is undermined by road degradation, deteriorating security, a lack of refrigerated transportation, and the lack of dedicated air cargo services (Subsection 2.2.1). The growth of Afghanistan's horticultural processing industry also appears to be constrained by insufficient supply of plots in the country's industrial parks and by a lack of reliable and inexpensive electricity and water connections outside of these parks (Subsection 2.2.2). A lack of cold storage is also a constraint (Subsection 2.2.3).

2.2.1 Transportation

The positive effects of declines in fuel cost and truck rental on traders' access to transport are being offset by road degradation and deteriorating security in rural areas. Decades of conflict have resulted in the destruction of major roads connecting urban centers with rural communities and ongoing conflict means that infrastructure cannot easily be rebuilt. Roads that have been rebuilt often cannot be used as certain stretches are unsafe for drivers and cannot easily be maintained due to a shortfall in technical and financial resources. Nonetheless, the majority of survey respondents indicated that their access to transport has improved in recent years due to lower fuel costs and greater availability of trucks, potentially because of an excess supply of vehicles caused by the drawdown of NATO forces in Afghanistan. However, respondents complained about declining road quality, particularly at the tertiary level and which results

in long travel times and post-harvest wastage of up to 6 percent. Such wastage is a by-product of using traditional means of transportation (that is, donkeys and rickshaws) of commodities from farm gate to collection points.

Investments in refrigerated transportation are hampered by security risks and the uncertainty of customs and border procedures. The use of refrigerated trucks for the transport of perishable commodities could substantially expand export markets given the short shelf life of such commodities. However, few producers or traders are willing to make such investments given the low or highly uncertain profit margins underlying much current trade. Such investment decisions are particularly affected by the uncertainty of whether any given refrigerated truck will be allowed to cross a border or whether the refrigerated commodities will be required by customs and border agents to be reloaded onto a non-refrigerated truck at the border.

While strong interest exists among traders in exporting products by air, the development of such services is hindered by coordination failure. Air freight services—especially to India and Dubai—offer a potential means for exporters to overcome the high costs and uncertainties associated with overland transport and overland border crossings. Currently, horticultural products move as ad hoc cargo on passenger jets, which leaves the transport chain subject to the frequency of passenger flights and availability of cargo space. The establishment of regular cargo freight services require larger and more consistent flows of commodities, but producers and traders are unwilling to make investments in the requisite infrastructure to support such flows if cargo services do not exist. Given the apparent presence of a coordination failure, firms have requested that the Government subsidize the costs of establishing air cargo services until they become commercially self-sustaining.

Table 14: Transportation for Exporting Commodities to Regional Markets

Product	Regional Market(s)	Mode	Border Crossing	Transit Route
Raisin	Russia, Siberia, India, Pakistan	Ground	Torkham, Spin Boldak, Ghulam Khan	Uzbekistan-Kazakhstan, Pakistan
Berry	Pakistan, India	Ground	Torkham	Pakistan
Walnut	Pakistan, India, Islamic Rep. of Iran	Ground	Torkham, Spin Boldak, Islam Qala	Pakistan, smuggled to Islamic Rep. of Iran
Dried apricot	Pakistan, India	Ground	Torkham	Pakistan
Pistachio	Pakistan, India, China	Ground/sea	Torkham	Pakistan, Karachi seaport
Dried fig	Pakistan, India, United Arab Emirates	Ground/air	Torkham, Spin Boldak	Pakistan, Karachi seaport
Grape	India, Pakistan, United Arab Emirates	Ground/air	Torkham, Spin Boldak	Pakistan, Karachi seaport
Pomegranate	India, United Arab Emirates	Ground/sea/air	Torkham, Spin Boldak	Pakistan, Karachi seaport
Almond	Pakistan, India, United Arab Emirates, China, Islamic Rep. of Iran	Ground/sea/air	Torkham, Spin Boldak, Islam Qala	Pakistan, Karachi seaport
Fruit concentrate	, Kyrgyz Republic Pakistan	Ground	Torkham, Hayratan	Uzbekistan-Kyrgyz Republic
Apple	Pakistan, India	Ground	Torkham, Spin Boldak	Pakistan
Pine nut	Pakistan	Ground	Torkham, Ghulam Khan	(Smuggled)

Product	Regional Market(s)	Mode	Border Crossing	Transit Route
Saffron	United Arab Emirates, India, Pakistan	Ground/air	Torkham	Pakistan, (Air-Dubai Cargo, DHL, FEDEX, NTA)
Onion	Kuwait, United Arab Emirates	Ground/sea	Torkham	Pakistan (Karachi seaport)
Peanut	Pakistan	Ground	Torkham	(Smuggled)
Medicinal plant	India, China, Pakistan, Islamic Rep. of Iran, United Arab Emirates	Ground/sea	Torkham, Islam Qala	Pakistan (Karachi seaport)
Sesame	Pakistan, India, Islamic Rep. of Iran, Iraq	Ground	Torkham, Islam Qala	Pakistan, Islamic Rep. of Iran (and smuggled to Islamic Rep. of Iran)

2.2.2 Access to Serviced Land

Access to serviced land is a major constraint on Afghanistan's horticulture industry and public investments have been inadequate to relieve this constraint while potentially deterring private investors. The Government and international donors have invested in building and maintaining cold storage facilities and industrial parks with low-cost, reliable electricity connections. While such facilities have proved beneficial to firms which have used such facilities, the subsidization of such facilities has arguably created uncertainty that has undermined the willingness of commercial parties to invest in building such facilities and thereby reduced overall supply. Currently, the availability of land in government-financed industrial parks is oversubscribed and many firms complain that there has been a lack of transparency in the allocation of plots. In particular, a number of horticultural processors expressed complaints about the allocation of land on favorable terms to politically connected agents, who simply rent the land on to commercial entities. They also complain that land allocations in industrial parks are inadequate for the expansion of the horticultural crop storage and processing industry. One of the firms reported the resell price in Kabul to be "around US$90,000 per Jerib (2,000 m^2)," which is many times higher than the original prices set by the Government. A number of firms also reported land grabbing as a serious challenge. Stated below is the experience of one of the firms that received a parcel of land from the Government but could not physically take control of it.

"Despite the fact that the government specified land for my company to establish facility there, my company was unable to take control of it from the figurehead who actually has grabbed the government land. The government needs to reclaim the land first and then redistribute it to investors."

Access to continuous, high-quality electricity is a major challenge that all firms face in general and food processing firms in particular. Firms have experienced difficulties in getting access to power for the first time due to uncooperative staff at the power department and the corruption involved in the process. Companies that rely on heavy machinery require high-power, three-phase electricity, which is often more problematic and costly to obtain. One firm in Kabul reported that it paid US$3,000 in bribes to get three-phase electricity. A significant majority of the firms surveyed reported that shortage and quality of electricity, especially during the winter, has constrained their businesses, particularly in processing, sorting, grading, and packaging. Electricity shortages vary from area to area. Firms headquartered in north and west of Afghanistan did not report major electricity shortages. However, low voltage of electricity was reported as a challenge. Those based in Kabul, Kandahar, and Nangarhar reported serious outages and quality issues (fluctuations and low voltage) with electricity. Power outages, in most cases, are not based on proper schedule, and thus, the firms cannot plan accordingly. One firm based in Kandahar reported:

"Electricity is vital for the fruit business in Southern Afghanistan where climate is hot. Without cold treatments, fruits do not last for long. The current 8–10 hours of electricity supply is not enough."

Access to continuous, high-quality electricity is a particular challenge for food processing firms. The lack of electricity is particularly true for processing firms that require continuous and consistent quality (without fluctuations and high voltage) of energy. One firm reported that shortage of electricity caused it to "halt its machinery and turn back to traditional manual processing," which is costlier and time-consuming. Another firm claims that, "if it had access to electricity it could operate more machineries and hire 30–40 more employees."

While the cost of electricity is not a problem for some of the firms, others that operate machines for sorting, grading, and processing complain about high costs. The cost of electricity varies from one location to another and depends on whether the firm is located inside industrial parks or operates in a commercial area. The cost of electricity in commercial areas is higher than that in industrial parks. Based on a previous decision by Council of Ministers (COM), only companies which operated in industrial parks and export to foreign markets will get a subsidized electricity rate of AFN 6.75 per kilowatt. This decision did not include firms operating outside the industrial parks. The COM and the Cabinet decided (in May of 2016) to set a universal rate of AFN 6.75per kilowatt of electricity to all firms that operate in industrial parks. Additionally, based on this recent decision, firms that are located in commercial areas outside industrial parks will also have the opportunity to request for the subsidized rate. Table 15 lists the electricity cost as reported by firms in different cities.

Table 15: Reported Electricity Costs

Location	Charge per kWh (AFN)
Kabul	13.5
Herat	12.5
Jalalabad	12.5
Mazar	7.5
Kandahar	10.0

The severe constraints imposed on firms in Afghanistan by the inadequate and expensive supply of electricity are borne out in cross-country statistics. The 2017 Doing Business indicators report that, in two out of three aspects, Afghanistan performs worse than regional averages, which are in turn substantially worse than global averages. Specifically, an average of six procedures are required in Afghanistan to obtain an electricity connect, compared to 5.7 in the region, generally. Firms in Afghanistan can expect to wait 114 days to obtain a connection, compared to 134 days across the region. Moreover, the relative costs of electricity in Afghanistan are substantially higher than regional averages, 2,275 percent of income per capita in Afghanistan compared to 1,208 percent across the region. The 2014 Enterprise Survey reports that 80 percent of manufacturing firms in Afghanistan report that electricity is a major constraint on business, compared to 51 percent of firms across the region and 37 percent of firms in developing countries. The frequency and extent of losses of annual sales by manufacturing firms that are caused by electrical outages is similar in Afghanistan (7.2 and 13.6 percent, respectively) to regional averages (7.5 and 11.5 percent, respectively).

2.2.3 Cold Storage

A lack of access to cold storage is a challenge for fresh fruit exporters. Since 2006, substantial investment has been made, with the support of the international community, in cold storage facilities. The need and

scope for the 'cold chain', particularly cold storage facilities and refrigerated trucks, has also attracted private sector investment. The cold storage facilities that are currently available are costly because they are not designed to accommodate smaller quantities. The cost and design of large cold stores limits businesses from benefiting from available facilities. The existing facilities lack separate compartments with controllable temperatures. In Kandahar for instance, a cold storage facility exists with a large capacity, but if a firm needs to store a small quantity of items, the entire facility has to be refrigerated. The cost of running the facility has to be paid entirely by the firm. Due to lack of access to electricity, the cold storages often run on diesel generators. The storage fee charged per ton per 24 hours is estimated to be AFN 800. This cost limits firms' ability to use cold storage. The experience of one firm, which was forced out of the apple export business due to lack of access to cost-effective cold storage, is as follows:

"The company leased a government cold store with the capacity of one hundred metric tons for one million Afghani annually. The cold storage was run on diesel generator. For the first year, the company received 50% of its fuel costs as subsidy from Provincial Reconstruction Team. The company claimed to have ran a successful business of exporting apples to India and to have substituted about 20 percent of Iranian apple imports in domestic market. This resulted in significant financial gains for the company. However, after the PRT stopped its fuel subsidy, the company claims to have lost AFN 17 million in the second year, and stopped its apples business."

Hopefully, the recent agreements and ongoing investments will address the current lack of cold storage facilities. The Government of Afghanistan has signed Memoranda of Understanding (MOUs) with China, Uzbekistan, and India which allow Afghan traders to use cold storage facilities at the destination airports of the mentioned countries until their commodities are cleared from customs. Similarly, MAIL has recently outsourced, to the private sector, the construction of eight cold storage facilities in six regional trade hubs with a total capacity of 40,000 mt. These projects are expected to be completed in late 2017. Each facility is reported to be cost-efficient (AFN 15 per mt per day) and will have individually temperature-controlled compartments.

2.3 Human Capabilities and Technology

A lack of knowledge and poor practices prevent Afghan producers and traders from exacting the full value from horticultural crops and products. The value of horticultural produce in Afghanistan is commonly undermined by suboptimal cultivation practices, including inefficient use of irrigation, fertilizers, pesticides, and chemicals, and by poor handling and packaging practices (Subsection 2.3.1). The value of exported produce and the ability of Afghan traders to export produce to high-value markets is constrained by a failure by producers to meet the requisite quality certification standards and consistently supply varieties according to the preferences of specific markets (Subsection 2.3.2). Finally, the ability of Afghan producers to exact value from horticultural crops is also limited by a lack of knowledge among traders of the opportunities available in high-value markets and the requirements of such markets.

2.3.1 Production and Post-harvest Activities

Afghan horticulture is characterized by limited development of improved varieties and a lack of modern orchard management and cultivation practices. Extension services, which farmers used to rely heavily in all provinces, tend to be largely inefficient. Irrigation, fertilizers, and pesticides are rarely used in the most

efficient manner.[43] For example, traditional vineyard systems and poor pest management, in addition to improper post-harvest handling, undermine the production quality of grapes produced in Afghanistan. Notions such as crop density, pruning, or fruit thinning are rarely understood. Post-harvest activities such as sorting, cleaning, packaging, and handling are minimally performed. This is a source of important waste and degradation of the final product value. While revenues from horticulture are good, farmers are ill-organized to reap the full benefit of their crops. The lack of working capital, access to finance for investment, and storage facilities are key constraints to maximizing their benefits.

The value of Afghan horticultural exports is often undermined by poor handling practices. For example, one pistachio exporter reported that merchants often mix two types (prematurely and maturely harvest) together which negatively affects the quality.[44] In addition, almond farmers often mix sweet and bitter almonds to increase quantity, which results in concerns among consumers in India about the poor quality of Afghan sweet almonds. Over time, Afghan exports have gained a negative reputation as being of mixed quality, and the very limited sorting process results in different sizes and stages of maturity in one package. Firms report that if this practice is not controlled at the farm gate, there is no way to separate the two types at later stages.

Additionally, produce is mostly shipped in bulk packages that are only suitable for the wholesale market. The use of retail package is very limited and also in many case the type of packing material used does not actually protect the product inside as it should.

Afghanistan's packaging and labeling industry has improved significantly in the past decade. Examples of quality packaging that did not exist before include products for Coca Cola, Alokozay Beverage Company, and Baheer printing. For the most part, however, traders complain of the absence of quality packaging in Afghanistan which can lead to damaged goods in transit. According to CHAMP, six years ago, Afghan traders would commonly put 15–18 kg of grapes in one box, which would result in damage to about 60 percent of them. As a result, CHAMP intervened by introducing 4 kg boxes, resulting in much less damage.

The poor quality of local packaging forces Afghan firms to import packaging material from other countries. A company that is based in Herat and exports mainly to Europe reported that it imports its packaging materials from Turkey because the packages made in Afghanistan do not meet European requirements. A packaging company reports that it brings in raw material from India. That is due to either the poor quality or unavailability of locally sourced materials. This firm pays 30 percent duty tax on its imports, which it believes is very high. Other companies that export goods to Pakistan for reexport are not overly concerned with the quality of packaging or proper labeling.

2.3.2 Compliance with Quality Standards

Traders attempting to sell products to higher-value markets are often unable to meet quality standards. For example, pomegranates are demanded in higher-value markets, but consumers in these markets will not accept cracked fruit. Consumers in the United Arab Emirates prefer smaller, sweeter fruit, while consumers in Europe prefer pomegranates that are less sweet. Traders have found themselves unable to meet larger orders for particular sorts of apples because of the lack of adequate supplies of these specific

[43] For example, cracking is a major problem common in all pomegranate-growing areas of Afghanistan and which decreases the shelf life and acceptability in high-end markets. According to one of the stakeholders interviewed, cracks in pomegranates occur due to a lack of water during the maturity stages.

[44] The reason behind mixing the two types is to lower costs and increase profit margins because illegally harvested pistachios are cheaper.

varieties. The quality of raisins, pistachios, and almonds is lost at the farm gate due to poor harvesting practices and the mixture of low- and high-quality fruits. As these lessons multiply, traders are beginning to recognize the need for stricter controls of supply chain operations back to the farm. Some express interest in establishing their own commercial farming operations to ensure a high-quality product. Others cite the need for stricter management of smallholder operations as may be obtained through formal or informal contracting agreements.

Higher returns to horticultural crop production and trade require stricter management of quality and the differentiation of the sorts of commodity demanded in different markets. Efforts to promote the expansion of production need to be balanced by commitments to meet the different quality requirements identified for each distinct end market. This starts with variety choice and continues through crop management choices, including the levels of irrigation and types and methods of pesticide application. Improved harvesting practices need to be linked with grading systems rewarding stricter quality control. Trader operations in the market need to reward quality differences. Efficient markets reward the efforts of farmers and traders to respond to consumer preferences. High costs lead to underutilization and contribute to larger pest problems. But quality concerns are also said to lead to overuse as farmers try to offset poor chemical effectiveness. While trading firms were aware of the risks of overuse, none sought to test their commodities for pesticide residues. Concerns about the impacts of pesticide residues on trade were limited.

2.3.3 Knowledge of Export Markets

Afghan traders lack knowledge of opportunities presented by and requirements of high-value export markets. While many efforts have been made to sell small quantities of a diverse array of commodities to higher-value markets in Europe, North America, Australia, and East Asia,[45] these sales have proved difficult to sustain. Producers and traders lack knowledge of trading opportunities in these higher-value markets, including information about the sorts of commodities sought, varieties preferred, required product standards in specification and packaging, and entry requirements such as quality and phytosanitary certification. As a result, Afghan traders pursue exports to neighboring markets where quality demands are less strict while neglecting high-end markets.

Afghan traders who export to high-value western markets claim that their trade relationships have been established either through personal channels or through foreign merchants. Some firms also took advantage of fruit exhibitions by taking orders from foreign merchants. One of the firms interviewed suggested that the Government should facilitate entry of Afghan traders to new, high-value markets through official channels (that is, using either trade or commerce attachés). Firms, on the one hand, claim that they have no major issue exporting to high-value markets and that there is no ban on Afghan horticulture commodities. On the other hand, these same firms complain about not being able to meet the requirements (that is, food safety, food grading, quality, packaging, and labeling, consumer preferences) of the target markets.

[45] Horticultural markets are becoming more differentiated. The highest quality products are shipped to higher-value markets, which reward value added through superior farm-to-market management. Mixed quality products, or those of uncertain quality, including much of Afghanistan's current production, tend to be resorted in intermediary markets. Residual or lower-quality products tend to be sold to bulk processors of secondary goods, including juices and canned products.

The inability to properly test commodities and obtain food safety and quality certificates constrains trade to high-value markets. Although firms obtain quality certificates from either the MoPH or ACCI, these certificates are not valid for high-value markets. One firm stated reported that, "due to lack of standard certificates, [it] does not have access to those markets directly and this issue is serious challenge for the company." Another trader that exports to high-value markets such as Australia, New Zealand, Canada, and the Netherlands through the Karachi seaport states that, "the main problem of the company in exporting to high-value markets is the preparation of standard certificates and meeting the requirements of such markets."

2.4 Financing

Access to finance is not to be perceived as a major constraint by horticultural firms. The explanation for this lies in the fact that most existing players are engaged in the pursuit of relatively short-term business opportunities only requiring limited amounts of working capital. Both conventional and Islamic financing appear readily available on a short-term basis, though many respondents have rejected conventional loans for religious reasons or because of perceptions that interest rates are too high and collateral requirements too onerous. A company based in northern Afghanistan stated:

*"*Moneylenders have approached me, I told them I cannot go for interest-bearing loans, which is against my religion. The government should come up with Islamic financing system."

A majority of commercial banks offer both conventional and Islamic financing. Creditors such as ADF and Islamic Investment and Finance Cooperative Group (IIFCG) offer *sharia*-compliant loans such as '*Wakala*' and '*Mudarabeh*'. Firms tend not to apply for Islamic loans because they either seem to be doubtful about *sharia* compliance or they cannot meet the requirements. The lack of public awareness and proper outreach on the part of the creditors are other factors that hinder the process.

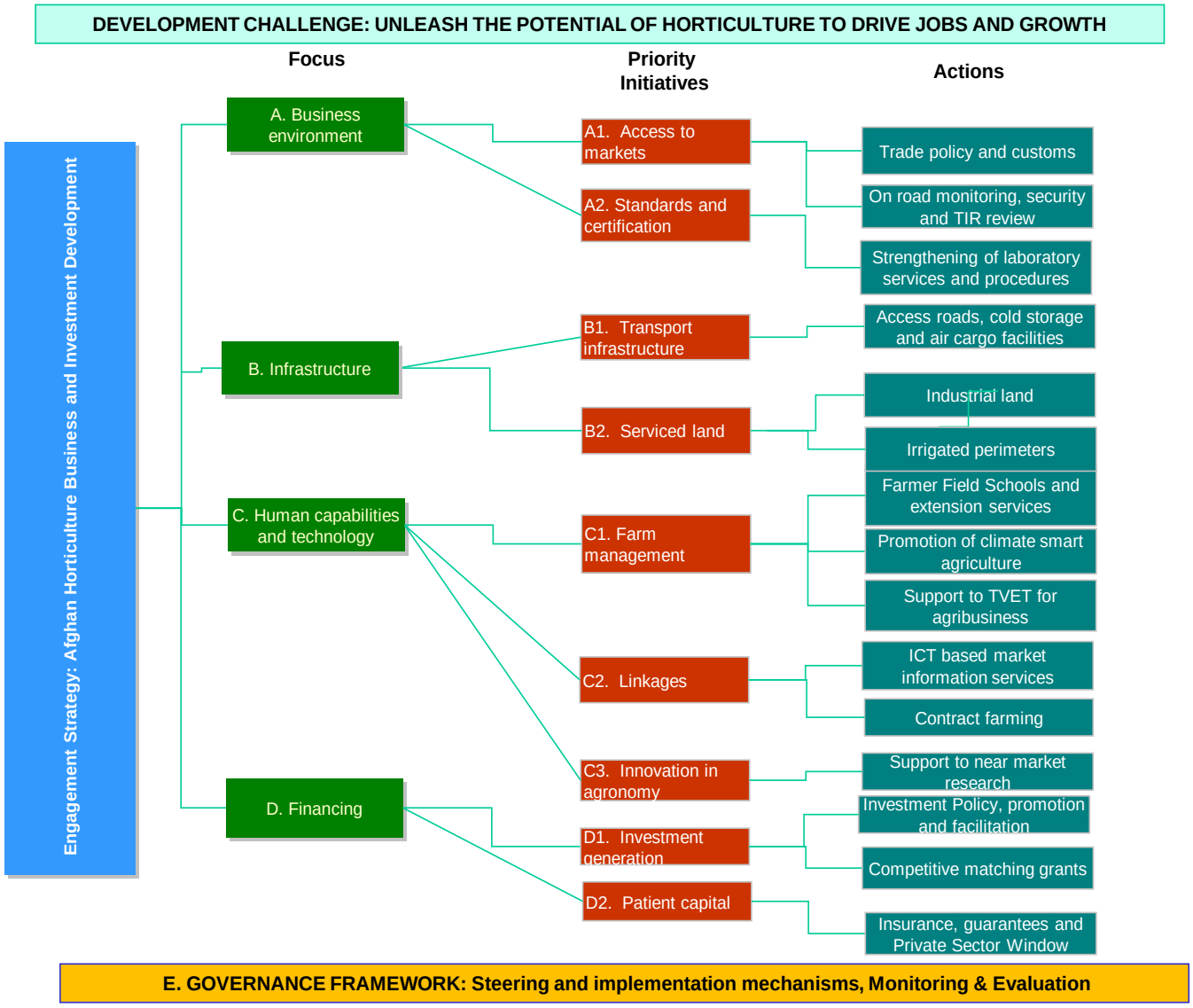
Firms that are willing to get conventional loans report that other factors such as strict requirements, high interest rates, and hidden costs restrain their businesses from approaching creditors, despite the need for financing. Property deeds used as collateral is one of the main requirements of the creditors. Providing property deeds is often difficult for credit-seeking firms, particularly those who have inherited (because the deed is not under their name) or are leasing the property. Firms also claim that the interest rates are between 13 percent and 15 percent, which they believe is very high. One firm experienced hidden costs in his conventional loan, which increased the effective rate to 18 percent. Additionally, the study observed that because a majority of firms do not have a proper business plan, they are unable or unwilling to explain why they require external financing.

The 2014 Enterprise Survey reports that access to finance is a serious constraint on the operations of firms in Afghanistan. Very few firms, for instance, have a bank loan or line of credit (4 percent of manufacturing firms in Afghanistan, compared to 29 percent in South Asia generally), use banks to finance investments (3 percent of manufacturing firms in Afghanistan, compared to 26 percent in South Asia generally) or working capital (5 percent of manufacturing firms in Afghanistan, compared to 28 percent in South Asia generally). Overall, 43 percent of firms in Afghanistan reported that access to finance is a major constraint, compared to 27 percent of firms in South Asia generally and 28 percent of firms in developing countries.

3 Unlocking the Potential of Horticulture

The previous section highlighted the need for a paradigm shift to use the market as the starting point working toward producers (instead of starting from the production side); for actions which can help resolve a bundle of constraints simultaneously (for example, industrial parks and/or agribusiness hubs where access to land, utilities, and key services can be found); and given the highly insecure and fragile context of Afghanistan, the need for the Government (and development partners) to support the entry/expansion of leading investors with the provision of patient capital. In particular, there is a need for actions to focus on three priority areas: (a) Border/Customs/Logistics, (b) Agribusiness Hubs/Industrial Parks, and (c) Finance (Patient Capital/Agriculture Bank or alternatives/IFC's Private Sector Window).

Figure 5: Implementation Framework



Error! Reference source not found.5 provides a comprehensive implementation framework listing the priority areas and actions to be undertaken by the Government, many of which are in partnership with the private sector. The two urgent strategic priority areas that were not emphasized in the Agriculture Sector Review (2014) are Access to Markets (3.1.1) and the provision of agribusiness financing including, on a competitive basis, of Patient Capital (3.4.2) as a structural A2F solution to promote private investments at the critical junctures along the value chains (for example, testing services, cold storage, contract farming, and near market research). Such government support can be justified by the prevailing conditions in Afghanistan and the fact that such private investors will be critical to selling higher-value products to new markets.

3.1 Business Environment

As discussed in Section 2, the main issue in the business environment for horticulture is the difficulty for long-term players to secure safe and predictable access to (export) markets. Such concerns undermine the willingness and capability of firms to invest and develop stronger commercial relationships with identifiable sets of producers. Traders are more likely to use middlemen to buy commodities and less likely to invest in building the contractual relationships needed to improve product quality at the farm gate or invest in developing a cold chain. The other important issue restricting access to high-value export markets is the absence of reliable and reputable certification services on phytosanitary issues. The following paragraphs discuss the measures which could help facilitate access to markets and strengthen laboratory services and procedures.

3.1.1 Access to Markets

The most urgent and important issue is to ensure that the border with Pakistan remains open and that APTTA is revised and enforced. The second issue is to ensure that procedures at customs are simplified, automated, and properly enforced. The third issue is to ensure fluid and secure transit along the main transport corridors.

Afghanistan's export delays have increased over the years and are the highest among a group of regional comparator countries. Afghan exporters spent 86 days on average to ship their goods in 2014. This compares with 33 days on average in South Asia, 21 days for Pakistan, 25 days in the Islamic Republic of Iran, 21 days for China, and 17 days for India. The estimated cost to export in 2014 was US$1,922 per container in South Asia versus US$5,045 in Afghanistan. The country's export delays have worsened over time, from 67 days in 2005 to 86 days in 2014. The World Bank Enterprise Surveys shed some light on the causes of this market failure. Nearly half of surveyed firms have highlighted transport as a major or very severe obstacle to export both in 2008 and in 2014. High transportation costs may be caused by (a) high premiums that have to be paid by producers along the transportation routes and at the border to insure their merchandise against conflict risks, (b) monopolies enjoyed by trucking companies resulting from lack of competition, and (c) illegal taxes paid by truck drivers along transport routes and at the border.

3.1.1.1 Trade Policy and Customs

The following recommendations are taken from the proposed USAID funded World Bank Group trade facilitation program:

- Improving efficiency on documentation requirements and processes:
    - Reduce the number of documents and signatures required for trade operations.

- Implement a National Single Window (NSW) which provides a platform for a paperless (electronic) exchange of trade information in export and import trade operations. The NSW system should also link permit-issuing agencies with the Automated System for Customs Data (ASYCUDA) to allow for the seamless integration of all clearance processes, including a collective approach to risk management and inspection activities.

- Introduce a trade information portal for exporters to learn, in advance, the documentation and certificates that are requested to export certain products.

- Reducing waiting times at the border:

  - Make borders operational 24/7.

  - Introduce an advanced export declaration.

  - Reduce congestion at the border by separating pedestrian from trucks crossing.

  - Expand border capacity (due to lack of capacity, non-time-sensitive products are usually subject to delays).

  - Implement a management mechanism to improve the percentage of merchandise that is cleared at Jalalabad (truck monitoring, system compatibility, and so on).

- Improving interagency cooperation on trade facilitation matters. Consistent with the commitments of the WTO Trade Facilitation Agreement (TFA), it is recommended that the Government of Afghanistan formally mandate customs and other key border management agencies to maintain a National Trade Facilitation Committee (NTFC) to provide a formal mechanism for enhanced interagency cooperation and improved dialogue with the private sector.

- Enhancing regional integration:

  - As discussed in Section 2, firm surveys indicate that Afghan traders experience enormous difficulties while passing their shipments through neighboring country borders, which results in increased costs of doing business and trade losses to the country. Closure of borders at the discretion of neighboring countries, unexpected delays due to insecurity, administrative delays and unofficial payments at both sides of the border, off-loading and reloading of Afghan goods at borders, and extortionary practices on highways are some of the issues that delay shipments, increase trade costs (direct and indirect), and make export items less competitive in international markets. A reduction in the blockages of Afghan merchandise in neighboring countries (for weeks and sometimes months) would significantly reduce transportation costs and delays (source: World Bank Group roundtable with the private sector). Review, revival, and enforcement of APTTA could be an effective solution. As part of this review, the Governments of Afghanistan and Pakistan could consider the creation of a secured and efficient 'green channel' for perishable horticulture products.

- The Government should deepen and expand existing trade agreements with other regional partners to diversify export routes.
- There is a need to facilitate employment visas and work permits for foreigners seeking to invest in, and trade with, Afghanistan.
- Harmonization and simplification of custom procedures would be fundamental to facilitate transit trade.

- Strengthening domestic markets. Domestic markets are an important complement to export markets. They are an avenue for higher sales, employment, and potentially import substitution. Relevant aspects to develop the domestic horticulture markets include urban food markets, fresh fruit and vegetable markets, slaughterhouses, and cold chain facilities from farm to market (discussed in more detail in the following subsections). The development of such domestic markets will also constitute a stepping stone toward accessing higher-value export markets.

3.1.1.2 On Road Monitoring, Security, and TIR Review

For perishable produce, smooth and efficient transport services are critical and understanding this key constraint must be given high priority in time and budget. The extent of this issue needs further assessment of the magnitude of the problem, preferably quantified in lost earnings, but also the frequency, and, above all, the cause. Does it apply to all transporters, is it simply bribery, or is there an underlying problem with, for example, phytosanitary certification or perhaps vehicle maintenance? How do the present exporters cope to export US$200 million of produce?

The problem cannot be properly tackled until the underlying causes of delay and blockage are understood. An initial budget should assess the issue on all major transit routes. This can be done in collaboration with the traders and the transport companies and also with the cooperation of global logistics operations based in Afghanistan. Once an appraisal has been made, the solution can be designed and implemented. Continual monitoring should also be established.

On-road bribery costs have been tackled in West Africa by documenting and publishing the location and 'fee' at every point. However, it is interesting to note that an analysis of the costs found them to be far less significant in total than the cost of delays in customs clearance in origin and destination countries.

The TIR system[46] was re-launched in Afghanistan in 2013. However, the ACCI reported [47] that Afghanistan lacked a specific policy to benefit from the TIR system. Inadequate support from institutions involved and lack of awareness among drivers about the system are cited as reasons that the system could not be properly used. The Ministry of Transport and Civil Aviation has indicated that the TIR's re-launch and complete implementation was a priority of the Government. From 2013 to date, about 17 lorries of commercial goods had been sent abroad and in exchange about 1,125 lorries entered the country under the TIR system.

[46] A multilateral treaty, under the auspices of United Nations Economic Commission for Europe, to simplify administrative formalities of the TIR.
[47] http://electfions.pajhwok.com/en/2017/05/10/afghanistan-yet-fully-benefit-tir-system.

The government should establish and maintain a monitoring system for cross-border trucking routes. A sample of transporters or observers records the location of each block, the time, cost, and cause. The activity will also monitor border formalities.

3.1.2 Standards and Certification

Food standards fall into three categories. There are those that address issues of public health, food, and safety and those that deal with issues of adulteration and misleading use or adoption of brands, and finally there are the market-specific standards that relate to consumer preferences for product characteristics (size, shape, color, packaging, and so on) or organic status or ethical compliance. While a wide range of standards can be applied to fruit and vegetables, it is important to distinguish between those that are public and mandatory, concerning public health, phytosanitary or trade practice, and those that are voluntary and relate to market requirements. Overall, compliance with basic standards of public health and phytosanitary issues is obligatory to participate in value chains that go beyond country borders.

Box 1:

Afghanistan Jahed Ahadi Director of Plant Quarantine Ministry of Agriculture, Irrigation and Livestock "Concerning the execution of the SPS Agreement and the related modernization of SPS policies, Afghanistan modified its phytosanitary certification requirements; implemented SPS measures for fruits and vegetables; amended its plant protection and quarantine laws and regulations; and conducted a nationwide plant pest and disease survey, together with the related risk analysis. The Government of Afghanistan is also improving its infrastructure and facilities with the construction of eight new quarantine stations at the border; the purchase of advanced laboratory equipment; long- and short-term overseas training (3 months to 3 years) for 37 employees of the Ministry of Agriculture, Irrigation and Livestock; and the building of eight pest and disease diagnostic laboratories. The FAO and the World Bank have been Afghanistan's main development partners, and the country's short-term goals are to further harmonize its plant quarantine network with international regulations and to become a member of the WTO."

Source: https://www.adb.org/sites/default/files/publication/180517/modernizing-sanitary-measures.pdf

It can be argued, with justification, that standards can be used as barriers to trade and that the compliance costs tend to be passed back up the value chain so that only wealthier farmers or farming companies are able to participate. However, experience from other developing countries shows that, with the appropriate governance, standards can be supportive in linking farms to global value chains, upgrading abilities, and ultimately connecting to higher-value markets. The key lies dually in the strength of the institutions that ensure compliance and in the market intermediaries that communicate, coordinate, and build capacity among the producers to achieve the standards through close links (see 3.3.2).

Certification issues also apply to agricultural inputs (fertilizers, seeds, pesticides, breeding materials, veterinary medicines, and so on) that are both imported and supplied domestically by the private sector. However, most of the supplied inputs are of low quality, resulting in lower yields and productivity. This is caused by the absence of an effective regulatory system in the country to (a) enforce certification of seeds, veterinary medicines, vaccines, and so on; (b) control banned pesticides; (c) constantly monitor domestic supplies; and (d) prevent imports of low quality and hazardous agricultural inputs.

The World Bank Group Afghanistan Agricultural Inputs Program (AAIP) is establishing 14 different testing laboratories across the country. There is an urgent need to complement the AAIP and increase the awareness, demand, and supply of internationally acceptable standards and certifications in Afghanistan. The intent is to improve the regulatory framework that enforces the certification process. Specific areas of work include the following:

(a) **Certification.** Establish streamlined, transparent, and credible horticultural safety management, inspection and certification systems. Strengthen institutional and legal frameworks governing certification. Enforce the certification process as a complement to AAIP.

(b) **Standards and grades.** Upgrade phytosanitary standards and harmonize safety standards. Support small and medium enterprises (SMEs) in obtaining International Organization for Standardization (ISO) food safety certifications.

(c) **National Quality Infrastructure (NQI).** Develop an NQI framework for horticulture.

(d) **Hazard Analysis and Critical Control Point (HACCP).** Develop and establish an HACCP to address food safety issues.

3.1.2.1 Strengthening of Laboratory Services and Procedures

The Government should first develop a set of food safety objectives for Afghanistan, assess the risks and costs associated with food safety issues, and compile a food safety plan at least for horticulture. These should address health risk concerns and SPS regulations of export markets as well as for domestic consumers. The Government should also develop national guidelines for appropriate hygiene and food management practice.

The Government should then collaborate with private sector actors in the horticulture export chain to develop and fortify appropriate management systems for identified food risks and provide training to health authorities and inspection agencies on modern hygiene practices, regulation, and enforcement.

In parallel, the Government should strengthen MAIL's capacity to control the quality of inputs and the risks of exotic pests and diseases being imported. This should include capacity building for advisers and trainers providing services to the food industry.

Finally, the Government should also provide incentives (see Section 3.4 on financing) to the private sector to invest in the establishment of well-equipped quality control and testing laboratories that issue standard quality certificates of agriculture exportable commodities. Also, the upgrade of phytosanitary and safety standards, harmonizing of safety standards, and strengthening of institutional and legal frameworks governing certification are vital for export promotion.

3.2 Infrastructure

3.2.1 Transport Infrastructure

The cost of agricultural products for domestic markets and exports are also increased due to poor conditions of roads and transportation facilities.

3.2.1.1 Access roads, Cold Storage, and Air Cargo Facilities

These costs can be reduced by improving road infrastructure, especially access roads which have been relatively neglected in the past. The Government should also promote (see Section 3.4 on financing) investments in refrigerated trucks, cold storage, and dry ports to enable the exports of high-value perishable horticulture products.

The Government should also provide incentives to the private sector to invest in warehousing facilities both in provinces and at customs ports for exporters so that the shelf life of perishable exportable commodities is increased (30–35 percent of perishable crops are currently lost due to the lack of such facilities). These should also include grading, processing, cleaning, packing, and storage facilities for exportable agricultural products which are lacking in Afghanistan.

As an option for increasing and speeding up the delivery of export items (particularly high-value, low-weight items), air cargo facilities provide opportunities for faster and safer transportation. Although air cargo is much costlier when compared to inland transportation due to its current low scale, development and supporting of air shipment facilities minimizes the risk of high spoilage of perishable goods. Air shipments from Afghanistan are currently limited due to (a) low volume of exportable goods for shipment, (b) security threats, and (c) fear of illicit drug smuggling and lengthy bureaucratic processes at airports. Presently, the volume of exportable commodities shipped through belly cargo is limited. Most flights depart Afghanistan with empty belly due to low volumes of exportable goods. Nonetheless, belly cargo is not a reliable means of air shipment for many passenger airlines because passengers remain a top priority and air shipments are accepted only if there is free space. There exist significant opportunities for developing the horticulture sector and promoting exports if (a) exporters are able to reap the benefits of economies of scale due to large volume of shipments and air cargo facilities, (b) airfreight prices are reasonable so as not to affect profits margins of exporters unfavorably, and (c) export processes are streamlined at the airports.

Afghanistan has sought to expand the shipment of exportable commodities to key international markets through commercial air cargo, including cold chains facilities, freight forwarding, packaging, processing, and so on. This has taken the form of ad hoc loading of small quantities of perishable commodities on commercial passenger flights. Initial discussions with freight forwarding companies indicate the potential for expansion through air cargo. Active freight forwarding companies (such as Paxton and Move One) hold the International Air Transport Association (IATA) certifications for their international operations, and some of them partner with United Parcel Services (UPS) for exporting consignments from Afghanistan. They provide a whole range of forwarding services (documents' clearance, customs brokerage, warehousing, packaging, forwarding, aircraft handling, and so on). Both belly air cargo and charter air cargo options are used by local forwarding companies depending on the consignment size. Per kilo transportation of exportable goods through air cargo services costs roughly US$10–16 but this is inversely proportionate to the consignment volume. Further, belly cargo services by Afghan airlines could provide cheaper prices for Afghan exports as compared to international airlines. However, this solution is prone to uncertainty given the inconsistency of available space. A detailed commercial analysis is needed to evaluate the options for contracting a dedicated air cargo services to facilitate such trade directly to international markets. If commercially viable, a stand-alone project could follow the feasibility study.

An essential factor for the success of commercial air cargo is streamlined export processes at the main airports (in particular Kabul and Mazar-e-Sharif airports). This would require simplified documentations and processes to reduce export time, facilitate faster and more transparent export procedures at air ports, and provide consistency and certainty in the whole process of air cargo exports.

3.2.2 Serviced Land

As discussed in Section 2, access to serviced land (land with good access to roads, power, and water) has proven a lengthy, costly, and risky proposition for both industrial and agriculture investors along the horticulture value chains. The following paragraphs discuss how the Government could improve the supply of competitive and readily available supply of serviced land to investors.

3.2.2.1 Industrial Land

Food manufacturing and processing businesses lack adequate access to serviced land facilities in Industrial parks. With provision of these lands, food manufacturing and processing businesses will expand, their operations will increase, and new investment will take place. Furthermore, access to quality and uninterrupted electricity as well as finance will assist in boosting private sector investments and expanded business operations.

There have been many efforts to strengthen management and governance of the industrial parks in Afghanistan. At least a dozen fully and semifunctional industrial parks host manufacturing and processing plants mainly located in Kabul, Herat, and Mazar-e-Sharif. The Government also plans to develop a few industrial parks in multiple provinces. However, numerous changes in institutional setup of the industrial parks has caused delays in implementation of the strategies developed by multiple institutions over the course of a decade.

Considering the national priorities of the Afghan economy as well as competitiveness of the Afghan products at the regional scale, agribusiness firms should optimally be housed in the planned industrial parks. As such, the Government of Afghanistan should adopt an aggressive plan for the establishment and operationalization of a specific number of agro-industrial parks in different regions of the country. The proposed parks should be developed to provide investors with land and the required supply of utilities. The regulations for obtaining plots of land under these parks should be clear and transparent. The location of these parks should be carefully selected to be in proximity to areas of agriculture production and supply. The Government should also transfer the defunct SOEs' land to the Industrial Park directorate, which can be used for the development of industrial parks.

3.2.3 Irrigated Perimeters

Afghanistan has a total of 9.6 million ha of agricultural lands from which about 2.2 million ha is irrigated lands while 1.3 million ha is rain-fed areas.[48] Agriculture yields are usually higher (two to three times) in irrigated lands comparing with rain-fed areas. Irrigation also allows improved quality and consistency in the face of climate change, it is hence critical for high-value agribusiness.

Afghanistan's irrigated lands can potentially be increased to more than 4 million ha in a decade time or so by[49]

(a) Rehabilitating irrigation systems damaged due to conflicts;

[48] Statistical Yearbook 2015–16, CSO
[49] World Bank. 2014.

(b) Investing in new irrigation systems (canals, dams, and so on), which is much costlier as compared to rehabilitation. New investments also need more time to benefit the agriculture sector of the country as well as high-level coordination between inline ministries;

(c) Investing in strong institutions and polices to improve irrigation water management through defining legal and regulatory framework and strengthening irrigation associations as well as MAIL's irrigation department to manage the irrigation network; and

(d) Auctioning of government land to private investors interested in developing irrigation offtaker schemes with smallholders (see the section on productive alliances).

3.3 Human Capabilities and Technology

Competitiveness in the global marketplace requires management skills along the length of the supply value chain that protects the value created initially by the farmer or processor. In other words, each link depends on the skills of the steps down the value chain. In the case of fresh produce, management must excel to deliver a product that is dying from the moment of harvest yet must arrive at the market in an attractive condition with remaining shelf life.

Strong links along the length of the chain helps add value to the product. Links do not always form spontaneously and may require encouragement and management.

Overall, this focus will promote training both in the short term as extension services and in the longer term in supporting vocational schooling for commercially minded farmers as well as developing links that encourage interdependence.

3.3.1 Farm Management

Management is a collection of functions that must be applied to any business. Good management is a key determinant in competitive success and is relevant throughout the value chain from farmer to retailer. Too often it is ignored as a skill to be developed, particularly in the application of technical assistance to farmers. Good management at the farm level closes the yield gap between the competent and the optimal and achieves profitability. Farming requires technical skills from forecasting, planning, organizing, coordinating, and controlling and not simply basic inputs to reach optimal yield and profitability. Ensuring the availability of inputs is not sufficient to achieve competitive success and farming needs to become a professional activity. MAIL's extension services reach a limited number of farmers and areas due to outdated extension models, unrealistic mandates, and inadequate financial and human resources. To improve the availability and performance of these services to farmers—mostly in the short and medium terms—the activities outlined in the following subsections can be done:[50]

3.3.1.1 Farmer Field Schools and Extension Services

The farmer field schools approach was developed by the FAO over the past 25 years in Southeast Asia but has been applied across the world, including in Afghanistan which now has hundreds of such schools. Typically, a small group of farmers meets weekly with a trained facilitator at a farm. The group, perhaps working in smaller sub-groups, compares two plots weekly over one complete season. One plot is a control plot and farmed according to conventional local methods while the other is used to experiment with

[50] World Bank. 2014.

different practices or technologies. The farmers measure crop progress, sample for insects or weeds or disease, and compare performance over the period. It is not assumed that the experimental plot is necessarily better and the farmers themselves can assess the value of the alternative production system. The farmer field school system has been found to be a useful means of providing a risk-free setting in which to modify agricultural practices adapted to local conditions.

The FAO has worked extensively with farmer field schools to introduce integrated production and pest management programs. Activities across Africa have worked to sustain cotton production, introduce adaptations to climate change, improve pesticide awareness and monitoring, develop value chains, and, importantly, build social capital by using experienced teams from one area to help train neighboring regions or even countries.

This approach should be further pursued in Afghanistan as it feeds into the development of realistic extension services policy and models giving more role to information technology and the private sector. The Government should also encourage greater involvement of NGOs and the private sector in extension activities, recruiting and retaining more women for extension activities and conducting more trainings for the extension staff at MAIL.

3.3.1.2 Promotion of Climate-smart Agriculture

The FAO defines climate-smart agriculture as "agriculture that sustainably increases productivity, enhances resilience (adaptation), reduces/removes GHGs (mitigation) where possible, and enhances achievement of national food security and development goals." At the policy level, this can be promoted through index-based insurance, climate information services, appropriate infrastructure, policy engagement, and building of institutional capacity considering measures to ensure and maximize inclusion. At the practice level, activities include the promotion of appropriate techniques of soil management and crop management and the introduction of new varieties and breeds.

3.3.1.3 Support to Technical and Vocational Education and Training for Agribusiness

To continue the work in rebuilding and supporting the agricultural vocational education through development of the curriculum, teaching materials, and equipment and the training of the teachers. The objective is to create a new generation of graduates who are able to view farming as a profession.

3.3.2 Links

The earlier sections of this report show the extent of the constraints that entangle export horticulture. While the entrepreneurial trading drive of the individuals leading the business has helped them find a way to foreign markets, much more remains to be done to facilitate a more direct link between producers and the markets and build a freer trading environment that is attractive to investment. Currently, the business is carried forward as simple trading by enterprises that are not individually strong enough to influence a problem but nimble enough to find ways around. Collectively, however, it can be possible to achieve longer-term change. Linking, then is key: forward links with the markets to be demand led, backward links with the producers to achieve market requirements, and horizontal links to tackle barriers to exports, whether they are transit efficiencies, bureaucracy, or market access. Two actions are proposed.

3.3.2.1 Information and Communication Technology-based Market Information Services

With the increasingly widespread adoption of mobile phones in all environments, the ability to connect players throughout the value chain with each other and with information services offers opportunities (see Table 16) for efficiencies.

In 2015, Telenor Pakistan launched an initiative 'Khushaal Zamindar' (Prosperous Farmer) to digitalize agriculture and provide the necessary information to farmers to increase production. Within two years, close to 2 million farmers benefitted from this free-of-cost service that provides localized, contextualized, and customized information on a range of pre- and post-harvest issues.

Table 16: Mobile-enabled Solutions for Food and Agriculture: 12 Opportunities

Improving Access to Financial Services	Mobile Payment System	Increasing access and affordability of financial services tailored for agricultural purposes
	Micro-Insurance System	
	Micro-Lending Platform	
Provision of Agricultural Information	Mobile Information Platform	Delivering information relevant to farmers, such as agricultural techniques, commodity prices and weather forecasts, where traditional methods of communication are limited
	Farmer Helpline	
Improving Data Visibility for Supply Chain Efficiency	Smart Logistics	Optimizing supply chain management across the sector, and delivering efficiency improvements for transportation logistics
	Traceability and Tracking System	
	Mobile Management of Supplier Netwoks	
	Mobile Management of Distribution Networks	
Enhancing Access to Markets	Agricultural Trading Platform	Enhancing the link between commodity exchanges, traders, buyers and sellers of agricultural produce
	Agricultural Tendering Platform	
	Agricultural Bartering Platform	

Source: Vodafone/Accenture. 2011. *Connected Agriculture: The Role of Mobile in Driving Efficiency and Sustainability in the Food and Agriculture Value Chain*.

3.3.2.2 Contract Farming

Contract farming is a commercial arrangement linking farmers and buyers for producing and marketing farm products. It is simply a label to distinguish, on the one hand, a farming venture where there is an agreement between the farmer and buyer to produce and purchase, from, on the other hand, an operation where no such undertaking is present. The contractual arrangements would include, at the minimum, a promise of a consideration (for example, money, inputs, and services) in return for the product to be supplied at a specified time, quantity, and quality.

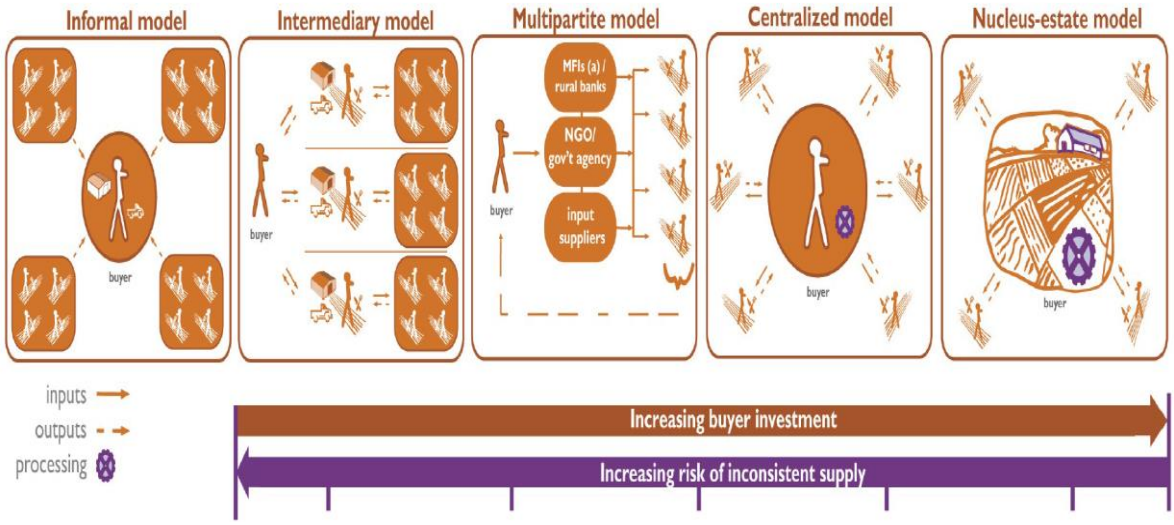
It is common that the small-scale farmer wants reliable access to the inputs necessary for commercial farming: credit, mechanization, seed, agrochemicals, and technical information, which are either not available or beyond the means of the asset poor. Extension services, to develop the farming and management skills, are often poorly delivered, and the small-scale farmer is usually coping with an unmanaged production risk and marketing an irregular surplus in a spot market.

These circumstances conspire to marginalize small-scale farmers who are less able to compete in a globalized marketplace. Contract farming offers a solution: a contractor provides inputs and know-how in exchange for a product. The immediate production issues are eased, and with the improved husbandry following the supply of extension services, productivity, profitability, and livelihoods are enhanced. If the

contractor also links to the market, then the chain is complete and small-scale farmers become full participants in the agricultural economy.

There are several models seen around the world and these are summed up in Figure 6.

Figure 6: Contract Farming Models



Source: TechnoServe 2011.

Box 2:

In Senegal, rice millers need to buy and stockpile enough paddy rice to process for six months after each harvest. This is difficult and places a financial strain on the factory unless they can negotiate credit terms with unwilling farmers. To ease this burden a local aid project brought together a rice factory (VITAL) with leading water-user Unions (representing the producers) and the National Agriculture Credit Bank (CNCAS) The following steps were put in place:

(a) The mill required wholesalers to sign contracts for processed rice, stating the price, and/or provide promissory notes.

(b) CNCAS and the farmer unions agreed on seasonal finance.

(c) VITAL agreed to no side-buying from farmers not in the arrangement.

(d) The farm gate price was agreed between VITAL and the farmer unions at meetings convened by the Agriculture Ministry.

VITAL contracted directly with the individual farmer groups.

After two seasons, 20,000 mt of rice was bought from 6,800 farmers, valued at US$4 million. The farm gate price has increased by 15 percent. The mill operated efficiently and CNCAS loan reimbursements improved from 80 percent to 95 percent.

Contract farming needs to operate in an equitable environment but it is generally felt that regulation should be light. It may be tempting to rely on regulation and legislation to protect the buyer against side-selling by the farmer, but in practice this is a poor solution. Farmers sell to alternative buyers when there is too much uncertainty in the contractual relationship and it is essential that a close relationship is fostered through regular visits and possibly renegotiation if markets move too far out of line. Relying on a visit before the season starts and then again at the end of the season to collect goods is not a viable scheme. Contract farming works well in dairying, for example, where there is daily contact.

Where contracts last over a longer time, the relationship becomes more important than the transaction itself. A legal approach to a contract might try to cover the risk of every eventuality in the life of the contract, but a more relational approach will look to secure the relationship and specify how to resolve disagreements. This is more likely to build the trust that is essential to the smooth running of the agreements. In conclusion, however, an independent form of dispute resolution should be available, and the establishment of an institution to mediate or arbitrate is key to giving businesses the confidence to enter these relationships.

Productive alliances have been successfully promoted in Latin America by the World Bank over the past 14 years. In outline, a productive alliance involves three core agents: a group of farmers or producers, buyers, and the public sector. A business plan is drawn up that connects the three parties and describes the capital and service needs of the producer group and proposes improvements that would allow them to raise their capacity and skills and reinforce their link to the market. Typically, matching grants can be applied to productive needs, technical assistance, and business development, and with an offtaker in the form of the buyer or buyers in the agreement, sales are assured. Experience across 21 projects in Latin America have shown benefits of improved social inclusion; a positive impact on production, sales, income, and employment; and longer-term vertical alliances between smallholders and buyers. The protocol has shown itself to be adaptable to specific problems, sustainable as well as efficient in terms of rate of return.

3.3.3 Innovation in Agronomy

3.3.3.1 Support to Near Market Research

This focus puts a spotlight on activities to innovate and take the subsector forward, in particular,

- Investment and investment promotion;
- New product - research and development;
- New markets - research and penetration, inward buyer missions; and
- Innovation in agronomy - specifically the introduction of new products, new varieties, and new technology.

Too often, innovation is seen as an entirely public sector responsibility, whereas decisions about future directions should be initiatives beginning with the inspiration and driven by the enthusiasm of the private enterprise. Innovation, however, carries risk, and public sector support is essential in bearing some of the front-end costs. Here matching grants can help to de-risk a new initiative.

Companies achieve competitive advantage through acts of innovation. Building a strong innovation system is key to economic growth and broader development. It can include

- New products, such as new crops or new varieties or new processed products;
- New production technologies, perhaps to improve farm yields or develop processing for example;
- Improvements in the supply chain, to make it more efficient;

- New services, such as grading for a market;
- New approaches to encourage change in enterprises;
- Developments in financing; and
- Developments in information handling.

Compared to other South Asian countries, Afghanistan's crop and livestock yields, as well as the general productivity of agricultural land, are lower.[51] This is caused by inadequate agricultural research and proper usage of technology that is almost nonexistent in the country.

To deliver better technologies for farmers and increase yields and productivity, the capacity of the national research system needs to be improved in the short and medium terms through

- Rehabilitating and strengthening of the existing network of research stations;
- Outsourcing research to international and national research centers working in similar agro-ecological areas, because Afghanistan is too small to undertake wider range of research on all agricultural areas; and
- Supporting near market research. This means focusing attention on research that is likely to be commercially exploitable. It is not necessarily linked to any product; rather it is guided by identified needs in the value chain. It may apply to the introduction and trialling of new varieties known to be in demand or the application of new processing technology. Because the signals for the research topics will come from the private sector, the research can be carried out in collaboration with the private sector through funding competitions. But note that it will also require the development of a culture of innovation because there is often an inertia to change. To encourage change there might be incentives to innovate, such as matching grants or tax relief for private sector research and development, or the introduction of specific technical assistance and the promotion of an exchange of ideas and know-how.

3.4 Financing

As discussed in Section 2, access to finance was not found to be a critical constraint to existing players along the horticulture value chains. This is because they are currently engaged in the pursuit of short-term opportunities requiring only limited amounts of work capital financing. In fact, and because of the prevailing fragility of the country, access to finance is much more problematic for investors seeking long-term capital to invest in the development of perennial crops and/or processing activities. Given the strategic importance of such investments in realizing Afghanistan's potential in agribusiness (one of the very few industries where it has a latent comparative advantage), it is recommended that the Government attracts and facilitates private investments through enhanced investment incentives, matching grants (to boost productivity-enhancing innovative and risk-taking activities by SMEs along the value chain), and

[51] World Bank 2014.

patient capital (as a structural A2F solution for strategic investors). These are discussed in the following paragraphs.

3.4.1 Investment Generation

3.4.1.1 Investment Policy, Promotion, and Facilitation

Investment retention is the best promotion strategy in countries affected by conflict and fragility. In contexts where attracting new investors may be challenging, retaining the existing ones is necessary. Retaining frontier investors who are willing to take the risk of insecurity and fragility is the starting point for cultivating a reputation as a likely investment destination. Retaining investors requires a clear retention strategy focused on building an investment aftercare program complemented by tools such as the Systemic Investment Response Mechanism (SIRM).

Specific actions to promote and facilitate investment in agribusiness could include

(a) Following the merger of AISA with MOCI, clarifying the role of Investment Promotion Directorate in promoting and supporting investment in Afghanistan;

(b) Evaluating the existing institutional framework for investment attraction, entry, and aftercare;

(c) Mapping the sources of local and foreign investors' governance challenges and grievances, including both government conduct and conduct of other informal institutions;

(d) Examining the coping mechanisms of existing investors and the reliance on formal and informal institutions for that purpose;

(e) Developing and implementing an action plan for implementing an investors' aftercare system and an SIRM that maximizes the possibilities for addressing investors' concerns on time; and

(f) Developing a realistic investment policy road map for attracting and retaining investments.

(g) Strengthening the capacity of export promotion agency of Afghanistan

3.4.1.2 Competitive Matching Grants

In fragile contexts, like Afghanistan, firms are often reluctant to invest in elements of innovation due to both economic and psychological factors. They commonly underinvest in the business and technical skills, know-how, information, and advice necessary for sustained outward-oriented growth that are often difficult to recover fully given the mobility of labor and the easy transfer of information. Entrepreneurs also tend to seriously undervalue the gains from using business development services to deal with competitiveness adjustments and develop exports, and/or they simply cannot afford them in the near term. They underestimate the need for substantial and sustained innovation investments in the market research, product adaptation, and promotion processes and therefore usually fail to compete in the market.

Matching grants are one of the most common policy instruments used by developing country governments to try to foster technological upgrading, innovation, exports, use of business development

services, and other activities leading to firm growth. A pilot phase of matching grants across four major cities (Kabul, Mazar-e-Sharif, Herat, and Jalalabad) in Afghanistan shows encouraging results. The intervention helped the firms in (a) increasing access to technical knowledge and business support services; (b) enhancing growth in employment opportunities and increasing incomes, (b) increasing investments in enterprises, and (d) expanding domestic and export market development. Prioritizing agribusinesses under the matching grants schemes could result in agribusiness firms' investments in innovation, market outreach, establishing new product lines, and so on.

3.4.2 Patient Capital

Leading agribusiness investors can have a major positive impact by helping develop/structure new horticulture value chains and bringing large numbers of farmers to higher levels of performance by providing them with access to higher-value markets, technology/skills, inputs, and financing. Conversely, such investors, as first movers, face high entry costs and risks especially in countries with underdeveloped value chains and challenging business environments such as Afghanistan. There is thus a strong case, for the Government, together with its development partners, to support the entry and operations of such investors. As discussed earlier, this can be achieved by facilitating them with access to land (always a lengthy and risky proposition for new foreign investors) as well as support to the farmers who will be partnering with them. It can also be facilitated through the provision of 'patient capital' in the form of insurance and/or long-term financing facilities. This is discussed in the following paragraphs.

3.4.2.1 Insurance, Guarantees, and Private Sector Window

The Government should develop insurance/guarantees with Multilateral Investment Guarantee Agency (MIGA) or other donor partners, as a means of opening up areas to trade that might otherwise be avoided. This provides the opportunity for collaborating with the ADF.

Box 3:

In 2013, MIGA issued guarantees totaling €1.35 million (US$1.8 million equivalent) covering an investment by Van den Heuvel Dairy and Equipment B.V. of the Netherlands and two private investors in the Kabul Dairy Processing Plant. The guarantees are for a period of up to 10 years against the risks of transfer restriction, expropriation, and war and civil disturbance.

The project consists of the establishment of a dairy processing plant that will process, produce, and distribute high-quality dairy products such as milk and yogurt primarily for the market in Kabul, Afghanistan.

Conditional finance is an important source of lending in Afghanistan with the ADF. This facility began in 2010 as a US$100 million project of USAID to provide the much-needed, long-term financing along agribusiness value chains. The ADF was rated the most successful USAID project in Afghanistan, with a more than 95 percent reimbursement rate and 60,000 farmers benefitting. The ADF is facing excess demand and discussions are under way to scale it up. The key innovation of the ADF is to provide long-term loans to agro-food processors on the condition that they lend a portion of their loans to their suppliers-farmers. This approach leverages both the agro-food processors' knowledge as well as the business leverage they have over their suppliers to ensure proper use of the funds and repayment. By contrast, commercial banks in Afghanistan mostly cater to urban areas and lack such access and knowledge. The ADF has been operated by professionals with extensive experience in commercial banking and agribusiness and incorporates financial products that are fully compliant with *sharia*.

Organizing a global investor competition leveraging IFC's new Private Sector Window. Recognizing the importance of facilitating the entry of strategic investors to create and develop new markets in fragile countries, IFC has recently put in place a new financing facility aimed at enabling such private investments. It is recommended that the Government organizes a global competition to award access to such financing facilities to leading companies interested in making a difference in Afghanistan.

3.5 Governance Framework and Next Steps

The Government should put in place a governance framework to steer the implementation of the horticulture strategy. This could consist of the following four proposed steps:

Step 1: Define the process. The Government should adopt a structured implementation process to help manage downstream complexities. This would start from the strategic road map, emerge with high-level recommendations, obtain consensus within the Government and with the private sector, set realistic targets, rope in the public to ensure accountability, establish the teams that will define and implement very specific tasks, closely monitor progress, and report on accomplishments as well as failures.

Figure 7: Defining the Process

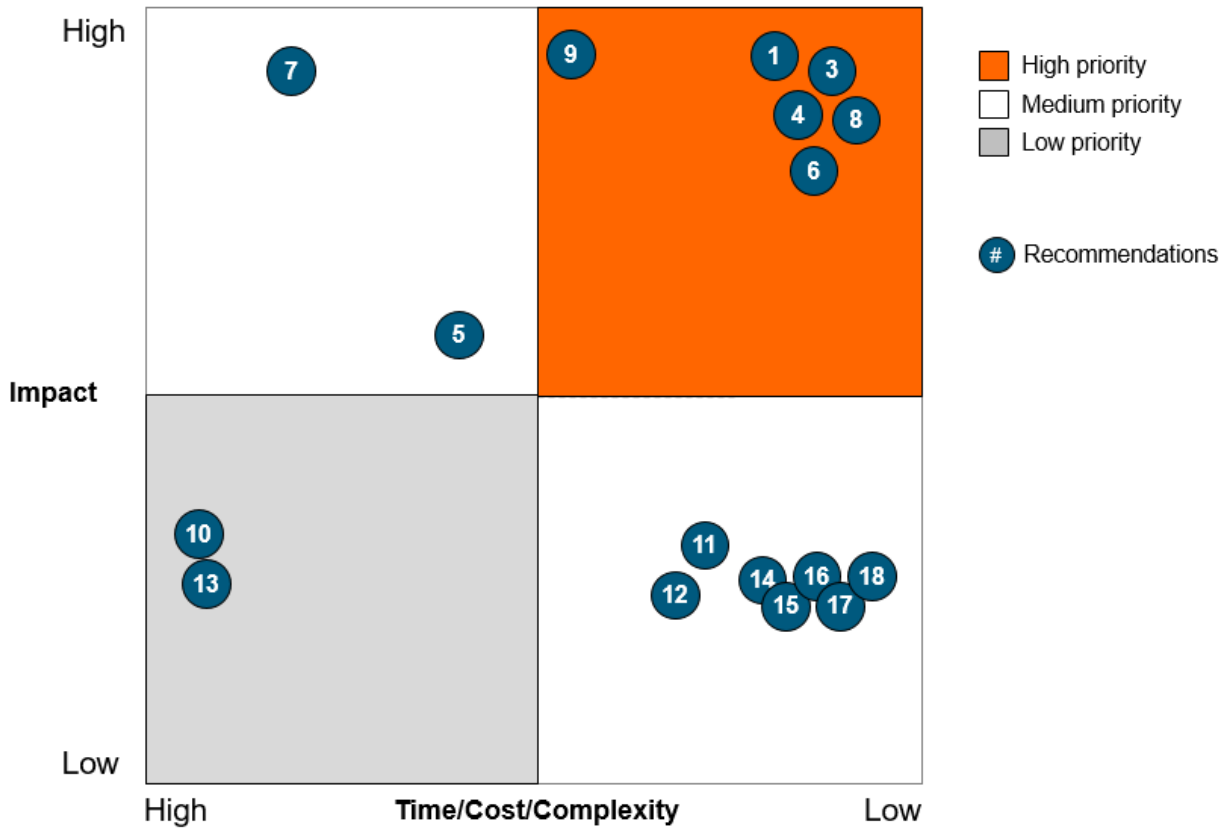
Next Steps:

1. Engage with the Government to identify two to four concrete strategic priorities.

2. Prepare short background notes on these strategic priorities.

Step 2: Prioritize and sequence the key high-level recommendations. For each high-level recommendation presented in this report, the Government should undertake a public-private dialogue to define (a) the time, cost, and complexity involved in implementing the recommendation and (b) the impact. This exercise will help the Government prioritize and sequence each recommendation. The recommendations that have low time/cost/complexity and high impact would be high priority. This is illustrated in Figure 8.

Figure 8: Prioritizing Recommendations



Next Steps:

(a) Launch a series of discussions on each of these strategic priorities with the Government and other stakeholders, potentially through a public-private dialogue mechanism, to (i) break each strategic priority down to actionable recommendations and (ii) sequence the list of actionable recommendations into short-term (0–1 year), medium-term (2–5 years), and long-term (6+ years) activities, based on considerations such as cost, time, complexity, and impact.

Step 3: Drill down each 'high priority' recommendation into 'three-feet implementation plan'. For each 'high priority' recommendation, as defined earlier, a detailed and realistic implementation plan should be developed. Table 17 proposes some of the key ingredients of this implementation plan.

Table 17: Sample Implementation Plan

Recommendation		Impact Target (With Baseline)	
Description		Linkages with Existing Initiatives	
Project sponsor (Funder)		Start Date	
Project owner (Lead Ministry)		End Date	
Total Budget		Implementation Risks/Challenges	

Case for change (as-is)	Detailed Recommendation

Aspiration (to be)

Next Steps:

(a) Launch a series of discussions on each of these strategic priorities with the Government and other stakeholders, potentially through a public-private dialogue mechanism, to develop detailed and realistic 'immediate implementation plans' for each short-term activity.

Step 4: Aggressively monitor implementation. A Gantt Chart is one illustrative possible project management approach to improve implementation effectiveness. Table 18 proposes a sample format for such a Gantt Chart.

Table 18: Sample Format for a Gantt Chart

Challenge	Initiative	Sub Initiative	Activity	Responsible	Start Date (dd/mm/yy)	End Date (dd/mm/yy)	Cost	Quantity

Next Steps:

(a) Support the immediate implementation plans through the existing and available instruments and products of the World Bank Group.

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Annex I: List of Stakeholders Interviewed

Organization	Name and Title
MAIL	H.E. Assadullah Zamir, Minister of Agriculture, Irrigation, and Livestock
MAIL	H.E. Abdul Qadeer Jawad, Deputy Ministry of Finance and Administration
MAIL	Ms. Adela Bakhtyari, General Director of Horticulture
MAIL	Mr. Hanif Sufizada, Institutional and Economic Development Advisor to the Minister E-mail: hanif.sufizada@mail.gav.af Cell phone: 0775640945
MAIL	Mr. Mohammad Iqbal Karimi, Plant Protection Change and Management Specialist E-mail: Iqbal.karimi@mail.gov.af Cell phone: 0780357291
CHAMP	Mr. Said Hussain Hussaini, Value Chain Director E-mail: said.husaini@rootofpeace.org Cell phone: 0778871782
CHAMP	Mr. Mohammad Zarif Osman, Marketing Director E-mail: zarif@rootsofpeace.org Cell phone: 0785200900
FAO	Mr. Mohammad Aqa, Assistant FAO Representative E-mail: Mohammad.Aqa@fao.org Cell phone: 0799 668 336
FAO	Mr. Moeen Ud Din Siraj, National Operation Officer E-mail: moeen-uddin.siraj@fao.org Cell phone: 07002845 18
Insurance Corporation of Afghanistan	Miss. Gulshan Rezaye, Sr. Business Development Executive E-mail: Gulshan.rezaye@icaaf.com Cell phone: 0973 359079
Comprehensive Agriculture and Rural Development Facility	Mr. Ahmad Shakib Sakhizadaeh, Deputy Executive Director E-mail: Ahmad. sakhizadah@cardf.gov.af Cell phone: 0799 252 717
ANHDO	Mr. Najibullah Enayat, General Manager E-mail: najib_enayat@afghanistanhorticulture.org Cell phone: 0729804101
Afghan Cooling Construction Company	Mr. Obaidullah Wahabzai, Vice President E-mail: obaid@afghancooling.com Cell phone: 0700628432
Afghan National Standards Authority	Mr. Naqibullah Faiq, Director General E-mail: Dr.faiq.ansa@gamil.com Cell phone: 0799 100010
MOCI	Mr. Ahmad Zai Sayedkhaili, Director of SME E-mail: SMED.directorate@moci.gov.af Cell phone: 0799300 529
MOCI	Mr. Yahya Akhlaqee, Director of Transit E-mail: yahyaakhlaqee@gamil.com Cell phone: 07963000399
MOCI	Mr. Khaled Tayab, Director of Afghanistan Export Promotion Agency Cell phone: 0700050628
World Bank Group, IFC	Miss. Wagma Mohmand Kakar, Country Officer E-mail: WMohmand@ifc.org

Annex II: Locations of Firms and Core Businesses

No.	Location	Core Business
1	Mazar	Raisins, berries, walnuts, and dry apricot
2	Mazar	Raisins
3	Mazar	Raisins, sesame, pistachios, and dried apricot
4	Mazar	Pistachios and cumin
5	Mazar	Raisins and berries
6	Mazar	Fresh fruits imports
7	Kabul	Pistachios, almonds, and fresh apples
8	Kabul	Exports of apple, agriculture inputs import from India, Pakistan, and Islamic Rep. of Iran
9	Kabul	Almonds and pistachios
10	Kabul	Dry fruits, fresh fruits, and vegetables
11	Kabul	Food processing, juices, and fruit concentrate
12	Kabul	Almonds, pistachios, and berries
13	Kabul	Pistachios and almonds
14	Kabul	Pomegranates, apples, fresh apricots, and onions
15	Kabul	Almonds, dry apricots, and medicinal plants
16	Kabul	Seeds (wheat and vegetables)
17	Kabul	Grapes and apples
18	Herat	Saffron
19	Herat	Food processing
20	Herat	Saffron
21	Herat	Dry fruits
22	Herat	Saffron
23	Herat	Saffron
24	Herat	Dry fruits
25	Jalalabad	Melons, apples, grapes, and vegetables
26	Jalalabad	Jams, tomato paste, pickles, and juices
27	Jalalabad	Pine nuts and dry fruits
28	Jalalabad	Food processing
29	Kandahar	Fruit processing, especially pomegranate and grape
30	Kandahar	Pomegranate
31	Kandahar	Raisins
32	Kandahar	Pistachios, dry figs, and raisins
33	Kandahar	Pomegranates, raisins, and dry figs
34	Kandahar	Grapes and pomegranates, dry figs, and dry apricots. Importer of agricultural machinery and potatoes from Uzbekistan
35	Kandahar	Figs, almonds, and tea

Annex III: Regional Countries' Requirements for Imports

Table 19 provides the list of the documents required for exports. This is sourced from the MOCI. Please also refer to step-by-step export procedures/requirements from the Afghan government and mentioned countries, which are sourced from the CU.

Table 19: Regional Countries Customs Requirements

India	Pakistan
General Documents 1. Export goods packing list in the company form, which includes all details about the goods 2. Business license for domestic custom clearance 3. Quality Certificate by ARFVEPA 4. Phytosanitary Certificate by MAIL 5. 1- Transit Certificate by MOCI 2- Transit Form by Custom 6. 1- Certificate of Origin 3- Invoice by ACCI 7. 1- Airway Bill by Cargo Airline 2- Bill of lading by Freight forwarder 8. Letter of Credit if needed 9. In the Gemstone industry the IGI Certificate is required	**General Documents** 1. Export goods packing list in the company form, which includes all details about the goods 2. Business license for domestic custom clearance 3. Quality Certificate by ARFVEPA 4. Phytosanitary Certificate by MAIL 5. Certificate of Origin 3- Invoice by ACCI 6. 1- Airway Bill by Cargo Airline 2- Bill of lading by Freight forwarder
United Arab Emirates	**Uzbekistan**
General Document 1. Delivery order 2. Packing list 3. Original invoice 4. Attested original certificate of origin 5. Bill of lading 6. Receipt of duties or deposit settled 7. Inspection reports 8. In Gemstone industry the IGI Certificate is required **Transit Documents** 1. Delivery order (from the shipping agent) 2. Invoice 3. Certificate of origin (for non-Gulf Cooperation Council countries) 4. Packing list 5. Cash or check deposit of 5% 6. Customs Exit/Entry Certificate	**General Documents** 1. Export goods packing list in the company form, which includes all details about the goods 2. Pro Forma Invoice 3. Certificate of origin 4. Bill of lading 5. Electronic Export Information
Kazakhstan	
General Documents 1. Export goods packing list in the company form, which includes all details about the goods 2. Invoice by ACCI 3. Certificate of origin 4. Phytosanitary Certificate by MAIL 5. In the Gemstone industry the IGI Certificate is required	

Source: MOCI official website.

CONTROLUNION

AFGHANISTAN AGRICULTURE EXPORTING

UAE & India

Exporting any agriculture products to United Arab Emirates (UAE) or India requires a legally registered importer or who has a buyer registered to receive the goods. When food products reach either the UAE or India, the municipality inspects the quality of product to enter the country. If they identify any safety issues, it can be immediately rejected.

- Nether country requires food safety certifications or laboratory testing but specific buyers may have specific requirements such as HACCP or ISO 22000
- Indian importers must hold a valid Food Safety Registration number (FSSAI)
- Import and inspections standards are always changing to discuss with your client

STEP-1

AFGHANISTAN EXPORT LICENSE

Apply for exporting license

Ministry of Commerce Chambers (MoC)
(1st Makroyan, District 09) *http://moci.gov.af*

- Company holds a current AISA license issued by the MoC
- Full name of exporting company
- Copy of exporting company license
- Name and address of consignee
- Number and description of package
- Distinguishing marks including logo or product branding
- Declared means of conveyance
- Declared ports by entry
- Names of product and quality
- Botanical name of plant – Ministry of Agriculture (MAIL) *www.agriculture.gov.af*
- Master Airway Bill/House Airway Bill for Air channel
- Master Bill Of Lading/House Bill Of Lading for Sea Channel
- Commercial Invoice
- Certificate of Origin
- Packing List
- Delivery Order
- Production permits

STEP-2

PREPARING TO EXPORT

- VERIFY your specific fumigation requirements.
- MAIL Phytosanitary certificate costing 1,000 AFN – also required for lab samples
- ACCI Invoice - Ministry of Commerce
- The product enters Kabul customs (Jalalabad Road)
  - Truck details submitted including driver name and registration
  - Receive a Country of Origin certificate

STEP-3

PRODUCT LABELS

- Both the UAE and India require food labels on all imported foods including bags of dried fruits and nuts.

A UAE STANDARDS

- The UAE references the GCC standard #150-2007 require food labels to include specific food processes and expiration dates.
- The municipality of Dubai require mandatory registration of all food items at the point of entry.

B PRODUCT LABELS SHOULD INCLUDE:

- Exporting Company Logo
- Product Name & Quality (India does not require quality but focus on 'fresh' vs 'dried'
- Size of package
- Size of Box
- Lot size (total number of boxes or units – not mandatory but frequently requested)
- Best Used By Date
- Exporter address
- Importer Address

C

Label both the box and product packaging.

D

Label both wholesale & retail products including fresh fruit and vegetables; dried fruits & nuts and processed foods.

E

CU highly recommends using batch controls to identify any products requiring quality controls & potential recall procedures.

VISUAL INSPECTION AND LAB TESTING:

- Neither the UAE or India officially require lab testing to import agriculture products
- India offers onsite testing through its plant & quarantine labs who also verify fumigation.
- Importer pays for lab tests and storage fees.
- Fresh fruit and vegetables are visually examined and typically released within 6 hours.
- Delays will be caused by visibly poor quality and missing documentation.
- If required by your client, CU recommends using an ISO 17025 accredited laboratory.

Like the EU or US markets, future testing may include:

- Moisture
- GFS Pesticide (chemical)
- Aflatoxin
- Orchatoxin (raisins)
- Food safety panel which includes e-coli and salmonella

REQUIRED EXPORT DOCUMETNATION :

- Bill of Entry
- Commercial Invoice
- Bill of Lading / Airway bill
- Import License
- Insurance certificate
- Purchase order/Letter of Credit
- Technical write up, literature etc. for specific goods if any
- Industrial License if any
- RCMC, Registration cum Membership Certificate if any
- Lab Test Report (if required)

Control Union Afghanistan (Agriculture Services) • Street 15, Lane 7 • Wazir Akbar Khan • Kabul • Islamic Republic of Afghanistan

WWW.CONTROLUNION.COM KABUL@CONTROLUNION.COM +93 (0) 78 4819806

Annex IV: Sample Phytosanitary Certificate

Islamic Republic of Afghanistan

Ministry of Agriculture, Irrigation and Livestock

Plant Protection and Quarantine Department

68539

Phythosanitary Certificate

Plant Protection of: BALKH PROVINCE OF AFGHANISTAN

To: Plant Protection Org (S): IRAQ

No: .....

Description of Consignment

Original

1. Full name and address of exporter:	2. Full name and address of consignee:
3. Number and description of package: 575 BAG EACH 40 KG	4. Distinguishing marks: INVOICE NO (332) DATE 12.11.2015
5. Place of origin: BALKH - AFGHANISTAN	6. Declared means of conveyance: TRUCK NO 82B267/8-10 CMR NO 115
7. Declared port of entry: ERBIL - IRAQ	8. Name of product and quality declared: 23000 KG AFGHAN SESAME SEED
9. Botanical name of plants:	

This is to certify that the plant of plant products described above have been inspected according to appropriate procedures and are considered to be free from quarantine pests, and practically free from other injurious pests and that they are considered to conform with the current Phythosanitary regulation of the importing country.

Disinfection and, or disinfestations treatment

10. Treatment:	11. Chemical active ingredient: ALUMINIUM PHOSPHIDE	
12. Duration and temperature: 72 HOURS OVER 16	13. Concentration: 6 gr/M^3	14. Date: 19.11.2015
15. Additional information:		
16. Additional declaration:	Date: 19.11.2015	
17. Place of issue: BALKH AFGHANISTAN	Name and signature of the authorized office	Stamp of organization

No Financial liability with respect this certificate shall be attached to name of plant protection and quarantine department or to any of its officers or representative.