

AGRO-EXPORT IN UZBEKISTAN: CHALLENGES AND RECOMMENDATION

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Abstract: *The article addresses the main problems and challenges in the production and export procedures of fruit and vegetables in Uzbekistan. In assessing the export potential of the sector, the gravity theory has been chosen as the best option to analyze trade determinants. As main barriers for production and export in the sector, the right for land issues, recourse market scarcity, illiteracy of stakeholders, and complicated documentation have been derived. Correspondingly, the remedies like increasing the investment in R&D, strengthening the certification processes, attracting more testing laboratories, and adopting Best Farming Practices have been considered.*

Keywords: *Fruit and Vegetable Export, Certification, Gravity Model, Trade Facilitation, Phytosanitary.*

Introduction

The government of Uzbekistan is actively working on the development of this sector and implementing a number of reforms and, policies. The sustainable development of the Republic of Uzbekistan's agriculture and food chain necessitates the implementation of state policy based on novel approaches. A number of the main documents to meet this task are a decree "On Uzbekistan's Development Strategy" which approves Uzbekistan's Five-Area Development Strategy for 2017-2021, "Strategy for the development of agriculture of the Republic of Uzbekistan for 2020-2030" based on Decree of the President of the Republic of Uzbekistan No. PQ -5853 of October 23, 2019. Resolution of the President of the Republic of Uzbekistan dated March 14, 2019, No. PP-4239 "On measures to develop agricultural cooperation in the field of fruit and vegetable growing and Resolution of the President of the Republic of Uzbekistan dated December 11, 2019, No. PQ-4549" On additional measures for further development of the fruit and vegetable and viticulture sector, the creation of value chains in the industry".

The main goals of these documents are to fundamentally improve state policy while deepening reforms aimed at increasing the competitiveness of the agriculture and food industry, and they cover the following priority areas:

- Liberalization and facilitation of export activities, diversifying the export structure and geography, and expanding and mobilizing the export potential of economic sectors and regions;
- Reducing state participation in industry management and increasing investment attractiveness;
- Development of the system of agricultural science, education, information, and consulting services;
- Gradual diversification of government spending aimed at supporting the sector;
- Development of the system of science, education, information, and consulting services in agriculture;
- Development of a transparent system of sector statistics;
- To provide the establishment of specialized cooperatives on the basis of farms and dehkan farms operating in fruit-growing areas and increase their efficiency;

International agricultural trade, meanwhile, significantly contributes to economic growth in developing nations, particularly in Uzbekistan, where exports of agricultural products make up a sizable portion of the country's total exports. In order to develop recommendations for further improvement that will lead to economic growth and welfare, one of the priorities of this study is to examine traditional and contemporary theories of trade with reference to agriculture and to identify appropriate applications of theories applied in the case of Uzbekistan.

Despite being the main source of employment and the main export good in Uzbekistan, agriculture is not the country's top major exporter of goods. Instead, it imports more food and agricultural products than it exports. This is caused in part by a lack of access to the market, market distortions, and low productivity as a result of modern technologies and limited capital.

Producing fruits and vegetables is one of Uzbekistan's industries that is well-positioned for rapid expansion. Fruit and vegetable production is feasible in a sizable portion of the nation's agricultural regions. The sector has a significant amount of potential, in part because of the availability of favorable climatic conditions and in part because of the expertise attained by local producers.

A more diverse export structure increases opportunities in local and international markets while reducing vulnerability to demand shocks and price swings in foreign markets. Therefore, export diversification might be seen as a way to ease these particular restrictions. Countries' exports must be globally competitive in order to benefit from leveraging global markets and be successful in export diversification (Heiko, 2007).

Therefore, it is crucial to address the problems relating to the unstable state of the Uzbek fruit and vegetable export subsector despite rising global demand.

Literature Review

The following sections, which make use of the model's most recent research, discuss the theoretical and empirical foundations of the development of the gravity model equation. The next step is to apply the model's specifications to bilateral agricultural exports, concentrating on the fruit and vegetable industry.

Economics has a long history of research into the gravity equation. Numerous studies have been conducted on the gravity model. Recent works on the gravity model of the trade include Anderson and Yotov (2017), Yotov et al. (2016), Helpman (2011), Bernhofen (2013), and Van Bergeijk and Brakman (2010). Due to the model's perceived empirical successes, it gained popularity; however, because of the model's theoretical economic underpinnings, it had also faced some criticism. Then it opened the door for fixing these issues and expanding the model. Reports on these developments can be found in Anderson (1979), Bergstrand (1985), McCallum (1995), Deardorff (1998), Anderson and Van Wincoop (2003), and Feenstra (2004).

In order to more accurately estimate countries' purchasing power, some authors, including Porojan (2001) and Kucera and Sarna (2006), entered GDP per capita (GDP pc) into the gravity model of trade (GMT). This is because the traditional model equation captures the primary determinant GDP for assessing national income. Later, it was suggested by Kalirajan (2007), Iwanow and Kirkpatrick (2007), Lee, Koo, and Park (2008) that population data and GDP per capita be combined because countries with a larger population trade more due to better infrastructure and larger markets.

Deardorff (1998) found that a variety of trade models, including the HO model, increasing returns to scales, the Ricardian model, and others, were

consistent with the gravity model. Evenett and Keller (2002) provided evidence that only the HO model and the increasing returns to scale theories can adequately account for the success of the gravity equation. While this was going on, McCallum (1995) published a significant paper in which he applied the gravity equation to data on interprovincial and international trade by Canadian provinces from 1988 to 1990 to estimate the impact of national borders on regional trade patterns between Canada and the United States.

According to Yotov et al. (2016), there are at least five remarkable arguments that may explain the gravity model's enormous success and popularity.

1) Intuitive Model: The trade gravity model is very intuitive. It is similar to Newton's Law of Gravity.

2) Solid Theoretical Foundations: The gravity model of trade is a structural design with solid theoretical foundations. Because of this property, the gravity framework is particularly suited to counterfactual analysis, such as quantifying the effects of trade policy.

3) General Equilibrium: The gravity model is a realistic general-equilibrium system. That general equilibrium environment accommodates multiple countries, sectors, and even firms at the same time.

4) Flexible Structure: The gravity model is a versatile approach. The gravity's flexible structure can be integrated within a broad class of broader general equilibrium frameworks to study the links between trade and labor markets, investments, environments, climate change, and so on.

5) Predictive Power: Exploration, description, explanation, and prediction are the four basic goals of social science research and economic modeling (Ethridge, 2004; Babbie, 2007). One of the most appealing aspects of the gravity model is its ability to predict. The empirical nature of trade flow gravity equations consistently yields a remarkable fit between 60 and 90 percent with aggregate data as well as sectoral data for both goods and services (Van Bergeijk and Brakman, 2010).

Analysis

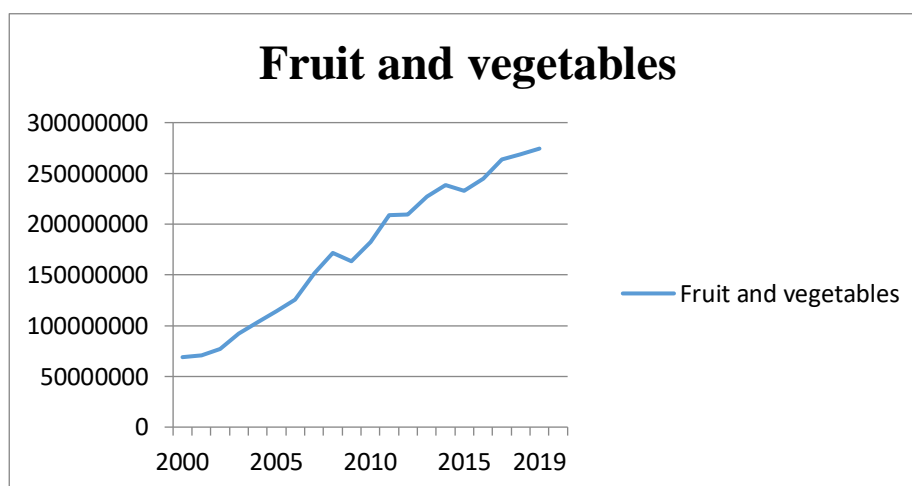
We require wholesome, sustainable, and inclusive food systems if we are to achieve the global development goals. Agricultural development is one of the best ways to slash extreme poverty, promote shared prosperity, and feed the

estimated 9.7 billion people by 2050. Growth in the agricultural sector is two to four times more effective than growth in other sectors at raising the incomes of the poorest people. According to a 2016 study, 65% of working poor adults relied on agriculture as their main source of income.

Agriculture, which in 2018 contributed 4% of the global GDP and up to 25% of the GDP in some least developed countries, is another significant factor in economic growth.

In 2021, it was predicted that the global market for processing fruit and vegetables would be worth 304 billion dollars. Asia produced nearly 80% of the approximately 898 million tons of vegetables produced globally in 2020. The most produced vegetables worldwide are tomatoes, onions, and cucumbers.

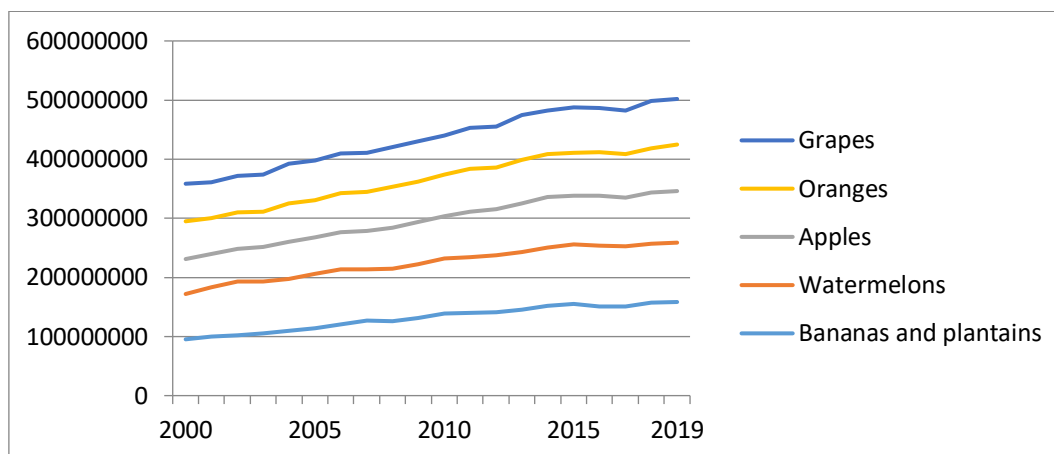
Between 2000 and 2019, the total production of primary crops increased by 53%, reaching a record high of 9.4 billion tonnes (see Figure below). In comparison to 2000, this is an increase of 3.2 billion tonnes. Cereals made up the majority of the crops grown in 2019, accounting for just under one-third of the total, followed by sugar crops (24 percent), vegetables, and oil crops (12 percent each). Fruit, roots, and tubers made up 9% of the total production, respectively. The use of pesticides, fertilizers, irrigation, and, to a lesser extent, a larger cultivated area, together with other factors like improved farming methods and the use of high yield crops, are largely responsible for the increase in production.



Pic. 1.3.1. World production of fruit and vegetables
Sources: Author's construction based on FAOSTAT.

Between 2000 and 2019, global fruit production increased by 311 million tonnes, or 54%, to 883 million tonnes. Five fruit species, including bananas and

plantains (18%), watermelons (11%), apples (10%), oranges, and grapes (10%), made up 57% of the total production in 2019, down from 63% in 2000. (9 percent each). Since 2000, the global share of bananas and plantains has slightly increased while the share of the other major fruit species has decreased.



Pic. 1.3.2.

World production of fruit, main commodities

Sources: Author's construction based on FAOSTAT. Minimum quality specifications for fresh fruit and vegetables of world markets (EU, China, and Russia)

Maintaining high standards for food safety and quality is necessary if you plan to export freshly produced fruit and vegetables to other markets. Furthermore, buyers frequently request certifications as a guarantee and responsible social and environmental behavior have evolved into a requirement for doing business.

Fruit and vegetables imported into the European Union (EU) must adhere to European plant health regulations. To prevent the introduction and spread of organisms harmful to plants and plant products in Europe, the EU has established phytosanitary requirements. The competent food safety authorities in importing and exporting countries monitor compliance with these requirements.

Certificate of Phytosanitary Fitness

A phytosanitary certificate is required for certain plant-derived products. As a result, suppliers must be aware of which commodities necessitate a phytosanitary certificate. Phytosanitary certificates completed in one of the EU countries' languages must be issued no earlier than 14 days before export, and

inspections must be completed no later than 14 days before export. All phytosanitary certificates must include the date of the phytosanitary inspection.

Requirements for Inspection by Recipient Country and Arrival Screening

If quarantine organisms are found in products from a specific country, the European Commission authorities may dispatch representatives from national plant protection authorities to the exporting country to assess the phytosanitary situation.

CHINA

For the majority of imported food and agricultural products, China has stringent documentation requirements, including those relating to quality, quarantine, origin, and import control. These can differ depending on the product and product category. Other criteria may apply, such as packaging requirements, pre-clearance (if applicable), treatment options, labeling requirements, and container conditions.

Over the years, exploration and practice have enabled China to establish a comprehensive food quality and supervision framework to ensure the safety of imported food. For high-risk imported agricultural products, the Chinese government implemented an inspection and quarantine entry system based on risk management. When imported food arrives at the entry port, entry-exit inspection and quarantine authorities inspect and quarantine it in accordance with the law. Import approval is only granted when the required standards are met. Meanwhile, if there are issues with the safety and hygiene of imported food, appropriate measures are implemented immediately.

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Table -1
Certificates required for export to China
Documentation Requirements for export to China

Products	Title of certificate	Attestation Required on Certificate	Purpose	Requesting ministry
All Agricultural and Food Products	Quarantine Inspection Permit (QIP)	Information regarding the content, volume, and physical characteristics of the shipment	General Import Certificate	AQSIQ ¹
Fresh Fruit, Vegetables, forest Products, and Tree Nuts	Phytosanitary Certificate	Varies by product. Certifies product is free of quarantine pests (Note: For apples, the shipment must also show proof that cold treatment was applied).	Plant Health	AQSIQ
	Certificate of Origin	Varies by product. A State Chamber of Commerce or other official body certifies product originates from China-approved growing sites	Product Origin	AQSIQ

RUSSIAN FEDERATION

Russia's regulatory framework governing the import of foodstuffs consists of (1) Eurasian Economic Union documents, (2) Russian Federal Laws, (3) Russian Government documents, and (4) regulatory documents of the bodies of executive power of the Russian Federation.

Food additive controls and regulations are covered in SanPiN 2.3.2.1078-01 (Section 9) and SanPiN-2.3.2.1293-03, "Hygienic Requirements for Food Additives." These regulations establish safety standards for food additives in order to ensure that products are safe for human consumption. Attachments 1, 3, 4, 5, and 6 to the SanPiN 2.3.2.1293-03 contain a comprehensive list of allowed food additives totaling several hundred items. Based on safety tests, Rospotrebnadzor may prohibit or allow food additives.

Rospotrebnadzor is responsible for setting tolerances for pesticides, veterinary drugs, and other contaminants in food. However, Rosselkhoz nadzor is

¹ Administration of Quality Supervision, Inspection and Quarantine

the primary enforcer of such tolerances in imported food and agricultural crops at the border.

Rosselkhoznadzor requires exporters to provide information on the pesticides used during the growth and storage of plant products, the date of the last treatment, and on the residue levels of pesticides in these products. The information may be in the form of a letter from the producer, from the product association, etc. There is no standard form, but Rosselkhoznadzor developed a sample form of a letter (declaration) in Russian on pesticides.

Discussion

Thanks to increasing consumer demand with a rising healthy living trend, Uzbekistan has to make strategic planning of its agricultural yield through irrigation, new variants of more effective seedlings (including dwarfs), greenhouses, and sustainable use of natural fertilizers.

Following, key barriers of production of fruit and vegetables sector are presented:

- Farm owners' (farmers') rights to use leased land are severely limited and poorly protected;
- Furthermore, the current system of mandatory land quotas for crops does not allow farmers to optimize production structure by taking into account soil features and climate, water availability, staff qualifications, and so on;
- Unpredicted climate condition;
- Resource markets of the industry are controlled by the system of administrative regulation.
- There is no unified team of reformers who understand the goals and directions of reforms as well as the methods for implementing them.
- The knowledge of farmers, dehkans is unfortunately low to acquire and implement foreign experience of successful planting techniques².

The economy of Uzbekistan relies strongly on the agriculture sector development as it has great potential to strength this sector with favorable climate, traditional way of planting and condition. However, the sector is significantly underdeveloped. It faces a number of problems though the country continuously establishes new reforms and policies to support the agriculture sector.

² Boosting SME Internationalization in Uzbekistan through better export promotion policies, 2017

Below, key barriers of export of fruit and vegetables sector are presented:

- As these products are classified as perishable, it very crucial to maintain high quality flow of distribution which requires very good logistic system.
- Unsuccessful greenhouse industry (exporting tomatoes and peppers grown in a greenhouse): the complicated bureaucratic and non-transparent procedure for connecting (and reconnecting) the gas supply required for heating their greenhouses.
- . Domestic farmers are not motivated to change their ways of working and produce higher-quality produce to meet the demands of international markets because they can profitably sell their current products in their home market and in Russia.
- Complicated nature of export control procedures.
- Limited access to financial resources for exporters. Limited access to finance is one of the main problems for exporters.

Taking into consideration the problems associated with the production of fruit and vegetable sector in Uzbekistan, the possible recommendation to tackle the issues have been developed:

The Accommodation of Business Practices:

- Stimulating input domestic production;
- Easing the state-owned monopoly of the resources market;
- Investment in cold chain infrastructure;
- Encouraged RAND in energy-efficient alternatives;
- Establishment of packaging factories;
- Lessening import cost to fertilizers;
- Implementing a package of economic incentives: partial grants, tax breaks, lands purchase/leasing assistance;
- Stimulating investment in processing companies; Organizing short courses on food processing;
- Training courses on SPS and TBT;

To increase the export potential of the sector and gain more benefits through economies of scale and scope, the following recommendations have been formulated.

The Modernization of Trade Compliance Systems:

Infrastructure and logistics to support export, the establishment of clusters transitioning to Agri Export Zones, national brand development (Italian experience), upgrading quality-testing infrastructure, private investment in laboratory services and quality certifications, and hiring and retaining qualified personnel ensure increase and support trade competitiveness.

Management of trade and customs procedures:

To strengthen trade management digitalization and centralization of export control procedures, attracting international certifiers, by increasing awareness of exporters, introducing modern laboratories with expertise, creating workshops and training to assist exporters in new standards, and obtaining certifications could be in case remedies of the issue.

The Institutional Mechanisms to Assure Effective Trade Implementation:

Creating well-defined KPIs of the stakeholders, establishing special survey agencies to monitor the implementation processes of the policies ensuring the market research, as well as special agencies for agriculture export promotion, ensure the effectiveness of policies, thus increasing competitiveness.

Conclusion

Recent empirical evidence suggests that theoretical developments in new trade theories, and to a lesser extent in new growth theories, are of significant practical importance for agricultural trade analysis, and that trade policy in the presence of imperfect competition is not constrained by theoretical abstraction. In the case of Uzbekistan's agricultural trade, we decided to use the gravity model, which takes into account the main determinants of trade such as distance between trading partners and country income, while controlling for other trade determinants in the form of dummies: the rule of law and common colonizer. The value of bilateral trade flows is positively related to the income of the countries and negatively affected by the distance between them, according to the basic gravity model.

In conclusion, the potential for agricultural production development in Uzbekistan is very high, both in terms of traditional crop cultivation and the use of new innovative formats and technologies. And ongoing reforms are aimed at fully developing existing potential, increasing the competitiveness of

both agricultural products and the entire agro-industrial complex. To achieve high benefit from ongoing reforms and gain absolute advantage from the trade of fruit and vegetables, Uzbekistan has to improve its specialization, organize the necessary infrastructure, and improve the system of processing and sale of crops. Thus, all these require pilot engagement all stakeholder, the government, high institutions, public-private individuals, complex implementation of policies: improving knowledge of producers, procurements, enquiring up-to-date farming experience via foreign language, the digital technologies literacy, increase the certification standards and the processes of obtaining them. Additionally, lessening the barriers for production and trade, relying on the data available, it is crucial to strengthen the system of compiling the agriculture data in order to employ econometric models to get more reliant feasible outcomes and make more precise decisions and policy recommendations.

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