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CHALLENGES AND OPPORTUNITIES IN FRUIT AND VEGETABLES EXPORT SECTOR OF UZBEKISTAN

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ABSTRACT

The paper analyzes the export and production of fruit and vegetable sector in Uzbekistan. It employs the gravity model approach and sector specific analysis to derive the shortcomings and barriers to its development. The model specifies the main determinants of trade in the sphere and shows essential advantages of the model to integrate into the trade and develop policy recommendation. Furthermore, in the SWOT analysis, the main barriers and strengthens of the sectors are presented. Finally, relying on the analysis, a number of policy recommendations are given to improve production level and export of fruit and vegetable sector in the Republic of Uzbekistan. The main recommendations are focused on the quality of fruit and vegetable commodities as the main components in the global market to be identified is the quality which is guaranteed via a proper certification system and standards. Thus, the main target is oriented to support the sector with crucial funds directed into R&D, sanitation, branding and etc.

Keywords: fruit and vegetable sector, export, GMT theory, certification, export restriction, storage and distribution facilities, sanitation, standards, agricultural commodities.

INTRODUCTION

Fruit and vegetable production is one of Uzbekistan's industries that have all of the prerequisites for rapid growth. A large portion of the country's agricultural regions are suitable for the production of fruits and vegetables. The sector's potential is quite high, thanks not only to the availability of favorable climatic conditions, but also to the experience gained by local producers.

Despite the fact that agriculture is the primary employer of labor and the primary export commodity in Uzbekistan, it is not the top major exporter of the products. Instead, it is a net importer of agricultural and food products. This is due, in part, to limited market access, market

distortions, and low productivity as a result of limited capital and modern technologies.

Uzbekistan should take advantage of its unique climatic conditions and concentrate on producing and processing in large quantities those commodities that cannot be produced in large quantities by the West and other parts of the world for self-sufficiency and exports.

LITERATURE REVIEW AND METHODOLOGY

In recent years, the GMT model has been widely used in agricultural export. The gravity model has been used in a number of studies. There are a great number of arguments to support why researchers are very interested in employing the gravity theory into practice:

First, Anderson and van Wincoop (2003) provided a clear solution to the McCallum border puzzle problem. According to their findings, McCallum's gravity equation suffers from omitted variable bias. They used the same dataset as McCallum to establish their arguments, and Anderson and van Wincoop (2003) used it to develop a more consistent and efficient model by including multiple resistance factors, which they then used to solve the famous McCallum border puzzle. The gravity model is the primary tool for determining trade barriers and costs. According to research, trade costs influence and thus act as a source of comparative advantage or disadvantage (Milner and McGowan, 2013).

Second, gravity theory and applied works are experiencing a reformation. The gravity model has been used in hundreds of papers and books to study and quantify the effects of various determinants of international trade. Gravity equation was treated and discussed in a separate chapter of a textbook for the first time (Feenstra, 2004). According to the nature of the data and estimation methods, various types of models are emerging in the literature. In the presence of panel data, for example, the dynamic gravity model is proposed (Olivero and Yotov, 2012). Furthermore, Head and Mayer (2015) investigated the gravity model's estimation procedures, technical questions, and theoretical interpretations, and described the gravity model's success as a "workhorse, toolkit, and cookbook." As a result of the previous research, the model is no longer an intellectual "orphan," but rather is now part of the rich family of economic theory (Anderson and Yotov, 2017; Anderson, 2004; Anderson and van Wincoop, 2004; Feenstra, Markusen, and Rose, 2001; Helpman, Melitz, and Rubinstein, 2008; Bergstrand 1985). 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).

RESULTS AND ANALYSIS

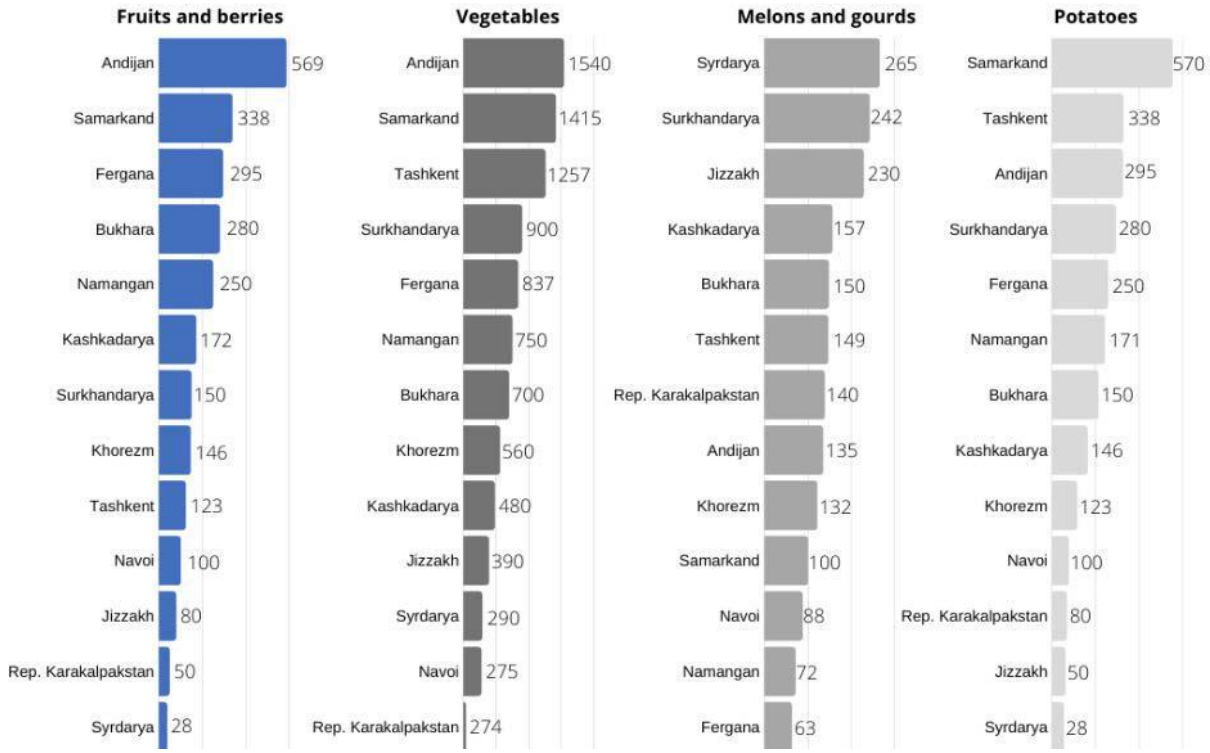
Since the fall of the Soviet Union, Uzbek agriculture has gone through several stages of restructuring. State farms were first divided and decollectivized into individual farms, then consolidated into farms ranging in size from 40 to 60 ha. The government established a dual system in which small, so-called Dekhan farmers raised livestock and horticulture products coexisted with larger individual farms raised cotton and wheat. In 2016, the government began converting cotton and wheat-growing land to higher-value crops such as fruits and vegetables grown in greenhouses. A new restructuring was announced in January 2019, with the goal of doubling the size of cotton and wheat farms to 100 ha in order to improve economies of scale. Today, food production in Uzbekistan is organized around individual farms and Dekhan farms.

The value of Uzbek agri-food exports has grown significantly over time. Raw cotton was the most important agricultural export product in 2000, accounting for 42 percent of

total export revenue ($1.05 billion). Cotton and textile products accounted for 15% ($1.2 billion) of total exports in 2017, while vegetables and (dried) fruits contributed 7% ($633 million).

Horticultural export was liberalized and no longer controlled by the state through "Uzagroexport" in July 2017. Export volumes increased from $633 million in 2017 to $851 million in 2018 . This is an impressive growth rate of nearly 35%. This result is due in part to the allocation of more land to the horticulture sector, and in part to the effect of direct economic gain for farmers.

Official statistics show a statistical tendency based on the central-economy targets set by the government for the regions. However, the official output in tons of major crops per region in Pic. 1 provides an indication of what is grown in the various regions of the country.



Pic. 1. Fruits and Berries, Vegetable, Melon and Potato production per region in 1000 tons, 2018.
Source: https://stat.uz

In Pic.2 and Pic.3, there were listed and summarized the SWOT analysis of fruit and vegetable sector of Uzbekistan.

Strengths	Weaknesses
➢ Fruit tradition ➢ Early on market ➢ Export Russia /Kazakhstan ➢ Cherries, Apricots, Grapes	➢ Landownership ➢ Export quality / grading ➢ Low marketable yield ➢ Starting material
Opportunities	**Threats**
➢ Processing ➢ New export markets ➢ Modern varieties ➢ Government strategy ➢ Donor programs ➢ UPOV membership	➢ Water restrictions ➢ Lack of virus free starting material ➢ Legislation, breeder's rights, certification ➢ Knowledge gap ➢ Government interference

Pic. 2. SWOT analysis fruit sector.
Source: adopted from Carl, R. and Victor, P. (2020)

Strengths	Weaknesses
➢ Vegetable tradition ➢ Climatically benefits ➢ Export CIS countries ➢ Tomatoes, onions, cabbage ➢ Greenhouse developments	➢ Technology level ➢ Starting material ➢ Variety registration ➢ Export quality, grading ➢ Low marketable yield ➢ No focus outdoor veg. ➢ Landownership ➢ Education / Research ➢ Weak processing
Opportunities	**Threats**
➢ Processing, clusters ➢ New export markets ➢ Hybrid varieties, modern technologies ➢ Government strategy ➢ Donor programs, private investments ➢ Yield, post-harvest, quality, improvements	➢ Old habits, government interference ➢ Gas allocation ➢ Import restrictions ➢ Knowledge gap ➢ Legislation, breeder's rights, certification ➢ Water, quality/scarcity

Pic. 3. SWOT analysis vegetable sector.
Source: adopted from Carl, R. and Victor, P. (2020)

DISCUSSION

The main target is to increase the volumes of production and achieve cost saving due to economies of scale, and as a result to improve the ability of Uzbek exporters to compete with other fresh fruit and vegetable suppliers on price. As for inputs side, the scarcity of domestically produced fertilizers and pesticides leads to high production costs and resulting less price competitiveness for Uzbek products. The remedy to this weakness, connections must be reinforced between Uzbek producers and input suppliers, with the support of the domestic production of this kind of inputs. Further support to this remedy could be the facilitation of the access of high quality planting materials without high import costs. These kinds of measures will lead to lessen production costs and higher yields per hectare.

To achieve high production volumes, it is very important to support sector coordination by making the registration of new associations easier via special Government bodies, and the key will be the effort to decentralize the registration. Sector associations and farmers must become more flexible in responding to market trends, which can only be accomplished through the dissemination of market research and the promotion of market-oriented production. Simultaneously, the sector will benefit from improved coordination among the various actors involved in the value chain, such as farmers, intermediaries, exporters, and researchers.

To increase the yield, it is crucial to adopt best farming practices. This could be achieved with a combination of policies, like the establishment and expansion of farmer field schools in the country's major agricultural areas. Another critical action to reach this goal is training and recruitment of female extension service providers. However, training alone will not be enough to maximize smallholder yields. Farmers must have better access to working capital in order to pay for improved production method. Measures to facilitate the expansion of commercial orchards will also be investigated. This strategic goal will also include activities aimed at increasing R&D investment in the sector. R&D is critical in several areas, including crop variety improvement and methods for extending production seasons. The outcomes of trials and pilot initiatives must be disseminated to stakeholders in the sector at all stages of the value chain.

Discussions with public and private stakeholders across the agricultural value chain revealed that certain structural changes were needed to increase fruits and vegetables exports. These include both general and commodity-specific measures that can be implemented quickly and at little to

no financial cost. The subsequent benefits, on the other hand, are numerous.

1) Assuring that processed agricultural products and all types of organic products will not be subject to any kind of export restriction (e.g., Minimum Export Price, Export Duty, Export Bans, Export Quota, Export Capping, Export Permit, etc.) even if the primary agricultural product or non-organic agricultural product is subject to some kind of export restriction.

2) In consultation with relevant stakeholders and Ministries, identify a few commodities that are critical for food security. Any export restrictions on such identified commodities in an extreme price situation will be based on a high-level committee's decision.

3) Liberalized agricultural product imports for value addition and re-export. A robust infrastructure is an essential component of a strong agricultural value chain. This includes pre- and post-harvest handling facilities, storage and distribution facilities, processing facilities, roads, and world-class exit point infrastructure at ports to facilitate rapid trade. Mega Food Parks, cutting-edge testing laboratories, and Integrated Cold Chains are the foundations for increasing Uzbekistan's fruit and vegetables exports. Given the perishable nature of most food products and the stringent import standards, agricultural commodities require efficient and time-sensitive handling.

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