Ukrainian gardening market trends under globalization

Abstract. Despite the fact that horticultural production has long history in Ukraine, national market is still going through its formative phase. Amid constant shocks in the political-economic system of the country – dismantling of central planning system, price liberalization, and great disparities between prices for industrial products and agricultural, military armed hostilities and occupation on the part of Ukrainian territory – once highly profitable horticultural industry suddenly turned into loss-making one. National gross production substantially decreased, horticultural production mostly shifted to small farms. The volume of fruit exports is drastically reduced, planting areas are rapidly declining and rates of reproduction of perennial plants dropped to a critical level. In Ukraine in the last decade individual farms became major producers of fruit and berries with share combined around 83%.

However, Ukraine can soon become a full player in the European market of horticultural products. This is due to several factors: geographical location of Ukraine; favourable climate conditions for different fruits and berries; low labour cost and low probability of wage increases in the short and long term; potential to increase supplies to the European export markets after the entry into force of the Association Agreement with the EU; organic production of horticulture which development occurs rapidly in Ukraine.

Keywords: Horticulture; Export; Import; Market; Competitiveness

JEL Classification: F13; О13; Q17

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Introduction. Products of the horticulture contribute large portion of food balance in Ukraine. Ukrainian agriculture provides high fruit crops because of natural conditions and existing economic capabilities of the country. Ukraine looks much stronger comparing to European countries in both natural and economic potential for industrial gardening. To exploit this potential Ukraine need to raise economic efficiency of gardening, and to provide deep zone specialization. In case of successful introduction of modern technologies and approaches to horticulture Ukraine may produce fruits and berries of virtually all climate zones, and in amounts sufficient both to fill domestic market and to enter international market.

Unfortunately, because of mostly ineffective management in industrial gardening Ukraine does not live up to its potential. On the contrary, for many years we witness continuing reduction of production of fresh fruits and berries, because of reduced gardens’ areas and reduced productivity. Productivity is plunging further amid lack of adequate logistics, failure to comply with modern farming practices, high manual labour intensity of production, and lack of incentives for better performance of employees. Low-level production of fruits and berries is affected negatively by reduction of production and sales infrastructure, preservation and processing facilities. Whole structure of horticultural production is degraded, pushing Ukraine out of international markets for good. Furthermore current sale prices usually do not cover costs of production, thus leaving producers without development funds. State of the crisis of Ukrainian horticultural production requires comprehensive theoreitical and applied studies to find way to increase efficiency of domestic horticulture, and to develop Ukraine’s potential to enter the European Union market.


Great attention is paid to the contemporary state and issues of development of horticulture in the world and in Ukraine in particular. Mullen (1975) and Keshavarr & Bell (2016) investigated issues of development in urban horticulture. Agbogidi & Adolor (2013) studied the role of home gardens. Research of the development of Atlantic gardens in Mediterranean climate has been undertaken by Pares, March, & Sauri (2013). Significance of horticulture for food security of the population was studied by Galhena, Freed, & Maredia (2013, Ferdous et al. (2016).

However, issues of efficiency of gardening, role of industries in the development of the European horticultural market require further study.

3. Results. Significance of horticulture for food security of the population is defined as economic activity that is carried out without legal entity, by an individual, personally or together with upon high-quality soils and good climate conditions (which made possible to cultivate various fruits and berries); historical traditions of horticulture; high domestic demand for gardening products, both fresh and processed. Further evolution of mankind and erosion of environment only contribute to growth in demand for fruits and berries. Now they are seen as important element of daily diet (one kilo of fruits and berries contain an average 440 kcal (2120 kJ), or about 15% of daily ratio), and as products with healing properties (especially valued for antioxidant and anti-radiation properties). Fruits and berries, and products of their processing are sources of carbohydrates, organic acids and vitamins. Potentially fruits and berries production in Ukraine can meet both domestic and foreign market needs.

However, current volume of production of fruits and berries in Ukraine is very low in comparison with countries with developed gardening. Even at the highest gross yield production of horticultural products per capita was about 50 kg, while in United States production of fruits and berries is 100 kg, in Austria - 134 kg, and in Holland - 149 kg. In recent years, the production of fruits and berries in Ukraine was slightly growing, yet in 2015 it amounted only 52.3 kg per capita, which is 36% less than consumptions rates for fruits and berries according to the Ministry of Health of Ukraine. Low consumption of fruits and berries is explained by both decline of production, and dramatic drop in demand.

In recent years Ukraine is not reaching its potential in fruit and berry production by far. Socio-economic climate in Ukraine deteriorated because of dismantling of central planning, price liberalization, great disparity of prices in industrial and agricultural production, and hostilities and occupation in some parts of Ukraine. Amid these issues most agricultural enterprises turned from highly profitable into loss-making, areas under gardens and rates of reproduction of perennial plants decreased, horticultural production is shifting to small farms, and exports of fruits dropped dramatically.

Lack of attention from government had negative impact on enterprises of all forms of ownership, but most harm was inflicted on industrial agricultural enterprises. After reforms in agricultural sector industrial gardening became unprofitable, and big industrial enterprises were gradually dismantled. Thus, mean fruit and berry crops for agricultural enterprise dropped from 1347.1 thousand tons in 1990 to 332.0 thousand tons in 2014. Areas under gardens decreased three times during the period of 1990-2014 (see Table 1).

Biggest share of fruits and berries production in Ukraine was delivered by small private peasant farms - around 83% (State Statistics Service of Ukraine, 2016, p. 80). According to the Law of Ukraine «On a personal peasant economy» (2003), this form of ownership is defined as economic activity that is carried out without legal entity, by an individual, personally or together with...
members of his family, to meet personal needs for production, processing and consumption of agricultural products, to sell surplus of production, and to provide services using personal property of the private peasant farm, including those in rural green tourism (Verkhovna Rada of Ukraine, 2003).

Domination by private peasant farms in horticultural production is definitely not positive trend. First, concentration of production in household farms is itself a manifestation of declining economy; it is typical for economic crisis and mass unemployment, when household is seen as a main survival and as a main source of income for rural population. Second, peasant farming relies on manual labour, has low level of mechanization and low capitalization of production, etc. That's why we see this trend as temporary one and in future we expect reducing role of personal peasant farms in the agricultural production of Ukraine.

Undoubtedly, development in the Soviet Union of gardening profited from high fixed prices for fruits, defined by social needs. Thus horticulture was highly profitable even for enterprises with low productivity. The average profitability in horticulture for 1986-1990 in both collective farms and state farms was around 66.7% (for the plantation yield of 33.2 kg/ha).

The highest gross fruit and berry crops in Ukraine were recorded in 1997 - around 3.0 mln tons (with public sector enterprises amounting 24%). In 2014 gross yield dropped to 1.9 mln tons.

The major issues of horticulture in Ukraine are: low efficiency of fruits and berries production, largely because of high number of older, low productive and thinned out gardens, and misused investment in plantation reproduction; degrading logistics; insufficient storage and processing facilities; shortage of investment for expansion of gardens, lack of own funds and of bank loans; relatively longer period of return on investment in horticulture; low incentives for innovations in technologies; significant impact of weather conditions.

Despite general profitability in horticulture in Ukraine, industry is developing slowly, and its share in GDP remains tiny at about 0.2%. Significant inflation amid permanent economic crisis in Ukraine is adding some mixed picture into statistics data. Table 2 shows clear profit growth in horticulture if to count net losses in USD or Euro.

To ensure steady progress of domestic gardening it is necessary to intensify innovations, and to ensure optimal use of economic and natural factors. These aims were set in the Program of Industry Development by the Ministry of Agrarian Policy of Ukraine by 2025 (Ministry of Agrarian Policy of Ukraine, 2008).

For steady growth of fruit and berry crops, it is necessary to develop and strengthen plants nurseries. In wake of reforming and privatization agricultural enterprises, plants nurseries also fell into private hands, thus disorganizing whole system of plants propagation, growth, and distribution of cultivated seedlings.

With lack of government attention and support, production of planting material for fruits reduced more than twice, and for berries - 3.5 times for past decade. As a result with planting materials used by horticultural producers we see growth of imports of quality requirements, and reduced resistance to diseases and pests. It is urgent to provide consumers with high-quality planting material of fruits, berries and grapes, to improve species-varietals and varietals-rootstock composition of seedlings, to transit to growth of recovered seedlings including fast fruiting varieties.

Improvement of plants protecting from pests and diseases is one of important factors to intensify horticulture and viticulture. Practical steps required are precise forecasting of pest occurrence, introduction of low-toxic insecticides, quickly decomposing in the environment after use.

There are plans to improve irrigation with commissioning of modern irrigation systems, and introduction of advanced methods of irrigation, including drip irrigation, under and over crown sprinkling.

It is also vital to widely use intensive types of plants to ensure rapid circulation of capital, and significant reduction of the investment period while keeping high productivity. Faster investment return can be also ensured by use of multiple garden cultures in the same area simultaneously. For example, for one rotation of an apple garden, wild strawberries on seed rootstocks are returning 8-9 turns.

Further development of domestic and export markets is another step to assist development of horticulture. The annual volume of imported fruits and berries to Ukraine reach 250-300 thousand tons; introduction of additional protection measures to support domestic producers against foreign competitors domestically should promote growth of horticultural production.

To make agricultural producers more sustainable on the domestic market against competition from abroad it is crucial to promote horizontal cooperation between national producers, first of all to create and run collectively processing and trading cooperatives.

The most acute problem in industrial gardening of the country is the issue of investment. Investment is vital to introduce advanced technologies, to processing and store fruit and berry crops, to reconstruct processing facilities, to develop market infrastructure and marketing system of enterprises.

During current economic crisis industry needs a target crediting (for no less than 5 years), increased budget allocations, allocation of 1% fee on alcohol and beer sales for the development of gardening, viticulture and hop growing, attraction of foreign investors. Competitiveness of farms may increase with expansion of storage and processing facilities adjustment to the production areas. Placing storage facilities at the farms will reduce peak loads for transport infrastructure, shipping costs, increase off-season employment. Direct participation of households in sales of products is seen as an outdated practice, diverting work force and finances from investment into production to the organization of trade. By doing otherwise we expect higher productivity and increase of profits.

Fruits and berries production is a complex system, which includes production of fruits and berries by different types of farms, processing of fruits and berries, storage of products, and marketing of horticultural products.

Research has determined high efficiency of horticultural specialization and agro-industrial integration. It is important for horticultural producers to run complete production to reconstruction and modernize processing facilities, to develop co-operation between producers for better access to processing and trading capabilities. Economic relations are based on the principle of mutually beneficial cooperation. Development of market infrastructure should include wholesale markets, trade marketing and industrial trade associations, commercial companies and trade houses, purchasing enterprises, etc. The steady delivery of fruits and berries to the consumer all the year round is major target of the horticultural production.

Tab. 1: Dynamics of production of fruits and berries in Ukraine (by type of enterprises)

<table>
<thead>
<tr>
<th>Year</th>
<th>Total, Kt</th>
<th>Agricultural enterprises</th>
<th>Private peasant farms</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total, Kt</td>
<td>% of total</td>
<td>Total, Kt</td>
</tr>
<tr>
<td>1990</td>
<td>2,901.7</td>
<td>1,347.1</td>
<td>1,554.6</td>
</tr>
<tr>
<td>1995</td>
<td>1,897.4</td>
<td>311.2</td>
<td>16.4</td>
</tr>
<tr>
<td>2000</td>
<td>1,452.6</td>
<td>264.1</td>
<td>18.2</td>
</tr>
<tr>
<td>2005</td>
<td>1,689.9</td>
<td>200.1</td>
<td>11.8</td>
</tr>
<tr>
<td>2010</td>
<td>2,765.6</td>
<td>286.6</td>
<td>16.4</td>
</tr>
<tr>
<td>2014</td>
<td>1,999.1</td>
<td>332.0</td>
<td>16.6</td>
</tr>
</tbody>
</table>

Source: State Statistics Service of Ukraine (2015, p. 78, 80)

Tab. 2: Efficiency of horticultural production in Ukraine

<table>
<thead>
<tr>
<th>Year</th>
<th>Number of producers, units</th>
<th>Average number of employees, thousand people</th>
<th>Area of fruiting plantations, thousand ha</th>
<th>Yield, quintal per 1 hectare</th>
<th>Gross yield, thousand tons</th>
<th>Revenues from sales, UAH mln</th>
<th>Net profit, UAH mln</th>
<th>Level of profitability,%</th>
</tr>
</thead>
<tbody>
<tr>
<td>2010</td>
<td>518</td>
<td>870</td>
<td>1,192</td>
<td>1,064</td>
<td>31.5</td>
<td>32.7</td>
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Source: State Statistics Service of Ukraine, 2016
Amid deep political and economic crisis in 2014 Ukraine shifted its horticultural products from Russian market to the EU market. The latter is highly promising for Ukrainian producers. While imports of fresh fruits and vegetables to EU/EFTA in 2010-2014 increased from Euro 4.4 bn to Euro 5.1 bn, Ukrainian share never exceed 0.2% (see Table 3).

### Tab. 3: Export of fresh fruit and vegetables in the EU/EFTA in 2010-2014

<table>
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<tr>
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<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
</tr>
</thead>
<tbody>
<tr>
<td>External imports, billion Euro</td>
<td>4.4</td>
<td>4.7</td>
<td>4.6</td>
<td>4.9</td>
<td>5.1</td>
</tr>
<tr>
<td>Ukrainian exports, %</td>
<td>0.20</td>
<td>0.12</td>
<td>0.17</td>
<td>0.15</td>
<td>0.13</td>
</tr>
</tbody>
</table>


The main suppliers of horticultural production to the EU market in 2014 were Morocco (Euro 961 mn, 18.9%), South Africa (Euro 625 mn, 12.3%), Chile (Euro 435 mn, 8.5%), Peru (Euro 364 mn, 7.1%), and Egypt (Euro 324 mn, 6.4%). Ukraine’s export in 2014 amounted to only Euro 6 mn.

However, Ukraine has fair chances to become a big player in the EU market of horticultural products. There are several arguments in favour of this assumption:

1. Location. Ukraine is an immediate neighbour of the EU, thus producers have an advantage of short term delivery of fresh fruits and berries. This is especially important for deliveries of berries, as they are more demanding to transportation and storage conditions;
2. Favourable climate conditions for growing most types of fruits and berries;
3. Low labour costs and low probability of wage increases in short to medium terms;

Another potential opportunity for Ukraine is its small presence in the market niches of some labour-intensive fruits and berries, such as cranberries, blueberries, currants, blueberries, raspberries, strawberries, and stone fruit crops, with most high growth rates among external imports of the EU (see Table 4). While today Ukraine has no established position in these types of export, it has production facilities or conditions to start production of most of products.

Also significant impact on the development of horticultural exports has entry into force of the Agreement on Association between Ukraine and the European Union, signed on June 27, 2014. Parties agreed to launch free trade area (FTA) during the transition period not longer than 10 years, in accordance with provisions of Article XXIV of GATT 1994; to reduce or eliminate duties on goods in accordance with agreed schedules, with transition period of 10 years for Ukraine, and immediately after the entry into force of the Agreement for the EU.

Gradual reduction will be applied to the base rate of customs duties fixed in the Agreement. For the most sensitive products traded between Ukraine and the EU so-called tariff quotas are introduced to provide a zero rate import duty within quota and non-zero - beyond the quota. The list of tariff quotas of the EU contains 36 positions, includes mainly agricultural products and foodstuff. (Burakovski & Movchan, 2014, p. 115).

According to the Association Agreement, parties will cooperate to promote development of agriculture and rural areas, in particular, through the gradual convergence of relevant policies and legislation, and through gradual adaptation of national regulations to the EU regulations and standards. Cooperation in agriculture and development of agricultural regions will promote mutual understanding of policies in agriculture and rural development, increase institutional administrative capacity in central and local governments, promote up-to-date and sustainable agricultural production, share knowledge and best practices in agricultural development policy, improve competitiveness of the agricultural sector, efficiency and transparency of markets, promote development and innovation, improve harmonization of issues under revision in international organizations. Implementation of Agreement may result in the following consequences for horticulture:

- opportunity to eat fruit and berries of better quality through increase of environmental standards of their production;
- agricultural development can have a positive impact on employment growth and well-being of local communities in rural regions of the country;
- companies would get more opportunities for cooperation and exchange of knowledge, experience and technologies (especially in organic gardening and biotechnologies) with counterparts in the EU;
- adapted standards of gardening products and infrastructure of fruit and berry markets will facilitate access for the Ukrainian agricultural companies to the EU market;
- government will get an opportunity to improve agricultural policy in accordance with the EU legislation requirements, improve planning, development and implementation of appropriate policies and support mechanisms at various levels, and to integrate agricultural policy with policy of development of agricultural regions;
- development of standards and market infrastructure of horticultural production will require additional funding from the state budget, and strengthening institutional capacity of the relevant authorities (Burakovski & Movchan, 2014, p. 115).

It is also important to implement policy for the improvement of quality of agricultural products through appropriate measures in the field of standardization, production process standards, and quality control. Today’s consumer, especially in the EU and other developed countries, not just expects high quality of the product, but requires environmentally friendly, genetically unchanged, product, with thoroughly supervised use of fertilizers. Modern society put quality of products consumed high on the list. Standardization and certification are effective tools of quality control of specific characteristics of quality of goods and services to meet the requirements of consumers.

The above factors will help to once again increase export of horticultural products, which in 2014 amounted to Euro 47 mn, showing a decline of 22% during 2010-2014 (State Statistics Service of Ukraine, 2016).

The main markets for fruits and vegetables in 2010-2014 were Russia (Euro 29.2 mn, 63%), other CIS countries (Euro 11.5 mn, 24.7%), and the EU/EFTA countries (Euro 4.7 mn, 10%).

As mentioned above, in recent years geographical structure of fruits and vegetables exports changed dramatically because of both economic and political factors. Thus, in 2010-2014 there was an increase of exports to CIS countries (+ Euro 6 mn) against reduction of exports to Russia (- Euro 17 mn).

In the product structure of Ukrainian exports stone fruit and nuts are dominating in volumes. It should be noted that over this period there is a trend for increase of export of processed fruits and vegetables mostly to the EU/EFTA market (Euro 198.5 mn, 52.6% in 2014).

However, during the first half of 2015 export of horticultural products decreased five times compared to the same period of the last year, and amounted to 583.5 tons. Among them cherries made up 484.9 tons, with 484.8 tons exported to Belarus, and apples - 71.3 tons, with 45.0 tons to Sri Lanka (Topchii, 2015).

Market of horticultural production in the EU is glutted, highly organized and very competitive. Majority of traditional fruits consumed in the EU, like apples, are...
The main objective of GLOBAL G.A.P. certification is to enable tracking of production. Its purpose is to verify that food products are safe and will not harm health of consumers and workers involved in their production. Certification also confirms that the production process does not harm the environment. Based on the system of fair agricultural practice, certification determines the list of criteria that each manufacturer should comply with. Historically fruit exports to Russia did not require certification, thus Ukrainian horticulture producers had little interest in certification. But now the issue of certification according to GLOBAL G.A.P. become urgent. Preparation for certification also gives producers an opportunity to rectify their advantages and disadvantages of structure work process, improve organization of production and document management. Today many companies in Ukraine provide producers with assistance to prepare for certification, and support the latter during the external audit.

Another obstacle for immediate growth of Ukrainian exports of fruits and berries resulted from the production of Russian embargo on European agricultural producers, primarily from Poland, Italy, and Benelux countries. These companies had to redirect their export flows to new markets, competing with Ukrainian products. Most European producers were looking for alternative to the Russian market in the Middle East, in Egypt, Saudi Arabia and the United Arab Emirates. Until recently only producers from France and Italy exported there. Moldova in 2015 also significantly expanded the geography of exporting apples, entering markets in Asia and North Asia, such as Bangladesh and Egypt.

Except for certification of products of horticulture, to expand export options one need international agreements on quarantine, production of plants, and food safety control. Today Ukraine has concluded bilateral agreements on plant quarantine and protection with Slovakia, Poland, the Netherlands, Bulgaria, Hungary, Georgia, Czech Republic, Belarus, Moldova, Canada, Azerbaijan, Georgia, Lithuania, Kyrgyzstan, Libya, Mongolia, China, Syria, Jordan, Turkey and Serbia. Ukraine also is the part of multilateral agreement establishing Coordination Council for Plant Quarantine of CIS countries. Several other agreements on plant quarantine and notably with Vietnam, are still under consideration. In September, 2014, the Cabinet of Ministers of Ukraine decided on optimization of system of central executive power bodies. Based on the best experience of the EU countries, it was decided to establish a single supervisory body - State Service for Food Safety and Consumer Protection - to combine functions of State Veterinary Phytosanitary Service, State Inspectorsate for Consumer Protection, and Sanitary and Epidemiological Service. Regulation of State Service on Food Safety and Consumer Protection was approved September 2, 2015. The task new institution is to reach full compliance of the Ukrainian control system to the EU regulations and principles, to ensure maximum transparency of activities, and to reduce the number of control functions and procedures (Poperechna, 2015).

To summarize issues of the domestic horticulture market, impact of its state on the prospects of Ukrainian producers of organic products to enter the EU market we found following aspects crucial for success of horticultural producers internationally based at Value Chain Analysis Report by the CBI upon the request of the Government of the Netherlands in September, 2015.

1. Lack of knowledge about the EU/ EFTA markets, and conditions to enter these markets.
2. Lack of necessary certificates for the EU market.
3. Lack of marketing skills for export activities.
4. Lack of refrigerator facilities.
5. Lack of domestic financial resources and limited access to long-term loans.
6. Lack of direct contact between Ukrainian producers and European selling companies.
7. Lack of cooperation between producers.
8. Weak sectoral associations thus unable to represent the interests of the sector, and to lobby interests of the producers.
9. Lack of state support for small and medium businesses.
10. Much smaller selection of certified pesticides and plant protection products, than that approved for use in the EU.
11. Lack of state promotion of exports and low level of public support for producers of fresh fruit and vegetables.
12. Lack of bilateral cooperation agreements with foreign nations, thus non-recognition of phytosanitary certificates of origin on potential markets.
13. Shortage of quality planting material.
14. Instability of fresh fruits supplies to processing facilities.
15. Lack of production capacities and raw materials for the production of dried and frozen fruit and vegetables.
16. Lack of awareness among stakeholders of corporate social responsibility risks in the EU market (labour, safety, environment protection, etc.).
17. Requirement by the government to return revenues in foreign currency within 90 days (previously 180 days).
18. Delay in the VAT refund to exporters.

4. Conclusion. Gardening of Ukraine is an important sector of the economy, with long tradition of production and bright prospects. Natural and economic potential of the country can provide gardening production not only to meet the needs of domestic consumers, but for export. However, industry is facing numerous issues of economic, social and political nature, thus unable to come out of crisis. Significant export potential of the Ukrainian horticulture is seen in development of organic gardening to meet requirements of European consumers.

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