REFORMS IN THE MELON GROWING SECTOR: RESULTS AND TRENDS

Uchkun Z. Alimov

Doctoral Student in "Tashkent Institute of Irrigation and Agricultural Mechanization Engineers" (TIIAME)-National Research University

──────────────────── **ABSTRACT** ────────────────────

The article analyzes the ongoing reforms in the melon growing industry, the amount of production in the industry, growth dynamics and trends in the recent years. The presence of structural changes in the cultivation of agricultural products is reflected in the increase in the area under melon growing products between 2015 and 2020 years. The increase in the volume of exports of melon growing products and the expansion of the geography of exports have had a positive impact on the efficiency of the sector.

KEYWORDS: *melon growing, international standard, organic products, export geography.* ────────────────

1. INTRODUCTION

The sustainable development of melon growing is directly explained by the specific characteristics of the industry, including the process of seasonal production of melon growing products, harvesting, storage, processing and delivery to consumers. Addressing the existing problems and shortcomings in the process of sustainable development of the industry through economic or organizational measures can serve to increase the efficiency of melon growing products production and expand opportunities to grow competitive products in the world market.

In recent years, effective measures have been taken in our country to provide the population with quality, edible melon growing products and increase exports. The President of the Republic of Uzbekistan, № PR-4709, dated November 11, 2020 "On additional measures for the specialization of the republic's agricultural production", sets out the directions for reform. Tasks set for the development of production, regulatory and coordination systems in accordance with the requirements of Organic and Global G.A.P. international standards, improving the quality and safety of agricultural and forestry products, expanding the geography of exports, as well as full use of the country's organic production potential are reflected in the Presidential Decree, № PD-5995, "On additional measures to ensure compliance of quality and safety indicators of agricultural products with international standards".

2. MATERIALS AND METHOD

The aim of the scientific research is to determine the available opportunities in the production of melons in the republic and the factors affecting the economic efficiency. In order to achieve the goals, set in the scientific work, the following tasks are performed: analysis of statistical indicators and identification of problems related to cultivation of poliz products in the republic; assessment of the situation through monographic and empirical analysis.

3. RESULTS AND DISCUSSION

As a result of organizational and economic reforms implemented in recent years, the area under melon growing products in 2015-2020 increased by 9.1 thousand hectares, in 2015 the area under melon growing products amounted to 52.0 thousand hectares, and by 2020 - 61.1 thousand hectares. The results of the analysis are showing that during 2015-2020, the volume of melon growing products production increased by 1.2 times (1853.6 thousand tons in 2015, 2134.4 thousand tons in 2020) (Table 1).

According to the data in Table 1, it is described that the growth rates in the production of melon growing products had different trends in various regions of the country. In 2015-2020, the Republic of Karakalpakstan, Andijan, Bukhara, Kashkadarya, Navoi, Namangan, Samarkand, Surkhandarya, Fergana and Khorezm regions maintained the growth trend, while Jizzakh, Sirdarya and Tashkent regions did not have a growth trend in melon growing products production.

Table 1. Information on the production of melons in the Republic of Uzbekistan (2015-2020)

Regions	Melon growing crop area, thousand ha.			Gross yield, thousand tons			Productivity, quintals/ ha.		
	2018	2019	2020	2018	2019	2020	2018	2019	2020
Republic of Karakalpakstan	10,1	12,0	11,8	134,4	146,8	152,6	128,5	118,1	132,7
Andijan	1,8	1,4	2,0	139,5	174,2	169,5	234,5	270,0	266,1
Bukhara	2,8	4,3	3,6	148,3	171,6	175,9	229,1	210,4	236,2
Jizzakh	9,6	9,8	13,7	227,0	262,3	264,4	139,6	136,4	112,9
Kashkadarya	5,9	4,5	4,9	149,8	163,2	163,3	229,4	237,3	229,9
Navoi	1,3	1,3	1,5	88,2	92,0	94,4	262,5	260,5	221,1
Namangan	1,7	1,5	1,6	76,1	86,1	94,3	170,4	174,1	171,3
Samarkand	2,7	2,3	2,8	120,0	129,1	131,1	229,4	207,8	128,6
Surkhandarya	3,0	3,1	3,8	249,9	295,1	307,6	303,1	246,8	245,5
Sirdarya	4,2	2,6	4,2	216,3	237,0	252,6	218,3	230,7	196,2
Tashkent	2,4	2,0	2,5	81,6	59,0	59,8	203,9	218,3	169,9
Fergana	2,0	2,9	3,1	82,6	112,9	124,6	170,8	164,6	141,7
Khorezm	4,9	5,5	5,8	123,3	139,4	144,2	203,5	203,7	191,5
Republic of Uzbekistan	**52,6**	**53,4**	**61,1**	**1837,0**	**2068,7**	**2134,4**	**189,8**	**180,4**	**168,3**

Source: [Compiled by the authors]

The level of productivity in the country, which is one of the main indicators of the efficiency of melon growing products production, has been declining in 2015-2020 (203.6 quintals/ha in 2015, 168.3 quintals/ha in 2020). The analysis of data shows that despite the negative indicators of average productivity in the production of melon growing products in the country, the productivity in the Republic of Karakalpakstan (119.8 quintals/ha in 2015, 132.7 quintals/ha in 2020), Andijan region (214.5 quintals/ha in 2015, 266.1 quintals/ha in 2020), Kashkadarya region (200.5 quintals/ha in 2015, 229.9 quintals/ha in 2020) and Khorezm region (179. quintals/ha in 2015, 191.5 quintals/ha in 2020) increased positevly. It should be noted that the yield varied across regions. According to the statistics, the average yield of melon growing crops in Jizzakh region was 112.9 quintals per hectare, while in Andijan region the average yield was 266.1 quintals in 2020. 59.8 thousand tons of melon growing products were produced in Tashkent region which was 94.3 thousand tons in Namangan region, 94.4 thousand tons in Navoi region, and 307.6 thousand tons in Surkhandarya region, 264.4 thousand tons in Jizzakh region, 252.6 thousand tons in Sirdarya region. This means that the approaches to increasing the efficiency of melon growing products production are not the same in the regions, the approach to the production process is not effective in all regions. This means that the existing potential is not being used sufficiently and effectively in the regions.

There are structural changes in the production of agricultural products as a result of reforms in agriculture in the country. In 2020, the area under melon growing crops in our country increased by 11,406 hectares compared to 2017 which the area under melons increased by 4,272 hectares, the area under watermelons by 5,832 hectares, and the area under pumpkins by 834 hectares (Table 2).

Table 2. Information on the Area Under Melons *(Hectare)*

Regions	2018				2019				2020			
	Melon	Watermelon	Pumpkin	Total	Melon	Watermelon	Pumpkin	Total	Melon	Watermelon	Pumpkin	Total
Republic of Karakalpakstan	4880	4398	822	10100	6 843	5 088	953	12884	6 730	4 992	1 081	12803
Andijan	354	1284	162	1800	297	1 147	120	1 564	390	1 453	154	1997
Bukhara	1090	1060	650	2800	2 559	1 717	443	4 719	1 885	1 628	1 004	4517
Jizzakh	3510	5882	208	9600	3 591	6 191	300	10 082	4 098	9 246	252	13596
Kashkadarya	1258	4180	462	5900	1 180	3 322	317	4 819	1 083	3 735	323	5141
Navoi	291	874	135	1300	433	843	178	1 454	396	1 004	249	1649
Namangan	798	810	92	1700	791	721	80	1 592	769	623	86	1478
Samarkand	738	1586	376	2700	790	1 467	356	2 613	859	1 831	503	3193
Surkhandarya	900	1576	524	3000	1 327	1 820	468	3 615	1 499	2 258	433	4190
Sirdarya	2252	1632	316	4200	1 769	837	217	2 823	2 104	1 527	201	3832
Tashkent	563	1448	389	2400	530	1 447	387	2 364	560	1 441	289	2290
Fergana	679	1263	58	2000	1 155	1 752	139	3 046	1 046	2 039	111	3196
Khorezm	1472	3463	165	4900	1 880	3 549	330	5 759	1 883	3 609	329	5821
Republic of Uzbekistan	**18785**	**29456**	**4359**	**52600**	**23 145**	**29 901**	**4 288**	**57 334**	**23 302**	**35 386**	**5 018**	**63706**

Source: [Compiled by the authors]

Although the area under melon growing crops in the country has maintained growth in all types in recent years, the indicators have varied across regions. The growth rate of melon growing crops is 6,696 hectares in Jizzakh region (6,900 hectares in 2017, 13,596 hectares in 2020), 1,390 hectares in Surkhandarya region (2,800 hectares in 2017, 4,190 hectares in 2020), 532 hectares in Sirdarya region (3,300 hectares in 2017, 3,832 hectares in 2020). hectares), but the area under melon growing crops decreased in Kashkadarya region by 1,159 hectares (6,300 hectares in 2017, 5,141 hectares in 2020), and in Khorezm region by 221 hectares (5,600 hectares in 2017, 5,821 hectares in 2020). From the analysis of the data in the table, it can be seen that the trend also differed by regions in the types of melon growing products (melons, watermelons, pumpkin). Melon crop areas in 2017-2020 were growing in Jizzakh (2406 hectares), Sirdarya (269 hectares), There were decrease in Kashkadarya (-109 hectares), Khorezm (-883 hectares) regions. This situation was also observed in the indicators of other melon growing products. In Kashkadarya region, in 2017-2020, the yield of melon growing crops increased by 29.4 quintals per hectare, but in these years the total area under melon growing crops decreased by 1159 hectares (Table 2.1). It can be observed that the land, which is the main source of production in agriculture, is not used to the extent of the existing potential in the regions. This has a direct impact on the growth of gross yields of agricultural products, including melon growing crops.

This is reflected in the data shown in Figure 1, according to the medical standards recommended by the Ministry of Health, the annual per capita consumption of melon growing products is 98.55 kg, 54.2 kg / person in Andijan region, 33.5 kg / person in Namangan region, 20.3 kg / person in Tashkent region, 33.2 kg / person in Fergana region, 191.3 kg / person in Jizzakh region, 117.1 kg / person in Surkhandarya region, 298.5 kg / person in Sirdarya region were grown in the amount of one person. This shows that there are different approaches to the reform of melon growing products production in the regions.
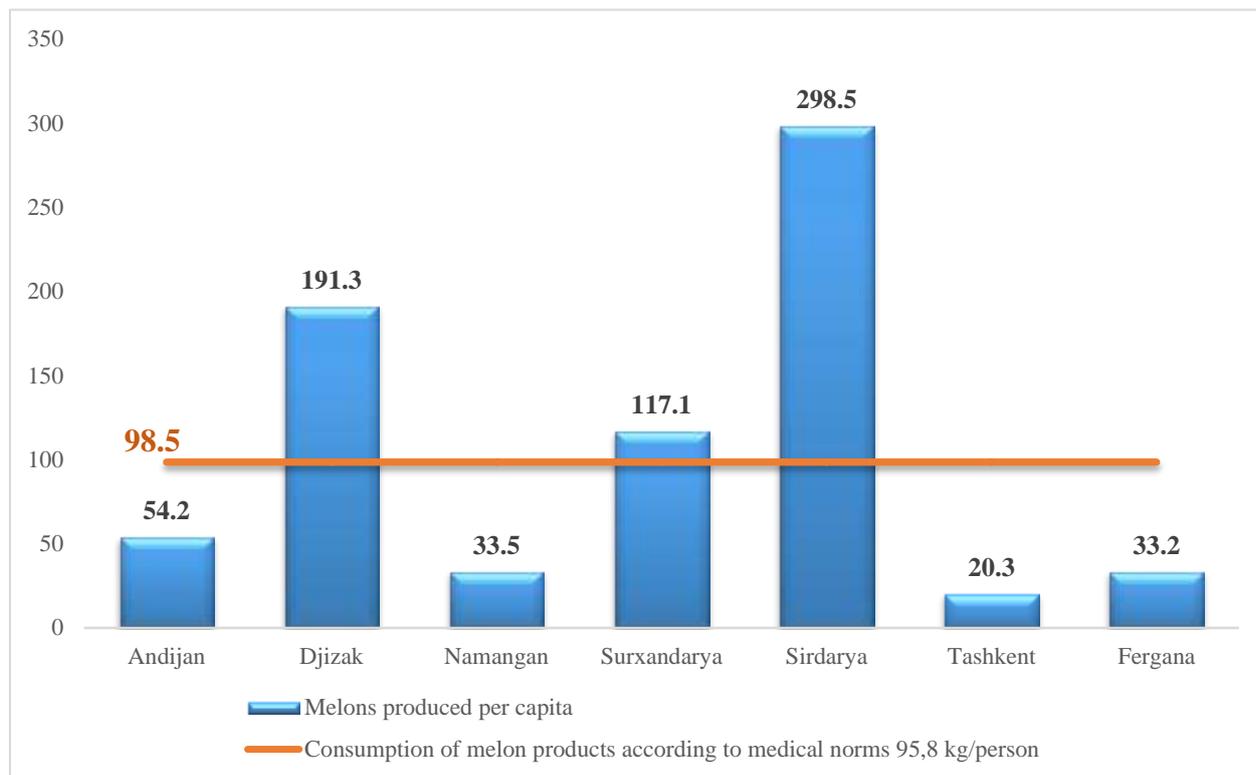
Source: [Compiled by the authors]

Figure 1. Status of production of melon growing products in accordance with medical standards in some regions of the country (2020)

According to monographs, the volume of melon growing products grown in Sirdarya and Jizzakh regions is several times higher than the established medical standards (3.0 times in Sirdarya region, 1.9 times in Jizzakh region). If we analyze these indicators in terms of types of melon growing products, a clear analysis of the situation will emerge (Table 3). The average per capita production of melons in the country is 23 kg, which is higher than the medical norm (54 kg) in Sirdarya (182 kg) and Jizzakh (71 kg) regions. Watermelon production has high indicators and a wide geography due to its adaptation to the natural climatic conditions of the country and the historical traditions of cultivation.

Table 3. Status of production of melon growing products in Uzbekistan in relation to medical standards (2020)

Regions	Melon			Watermelon			Pumpkin		
	Practically grown product per capita	Medical norm	The volume of the product grown in practice relative to the medical norm (+, -)	Practically grown product per capita	Medical norm	The volume of the product grown in practice relative to the medical norm (+, -)	Practically grown product per capita	Medical norm	The volume of the product grown in practice relative to the medical norm (+, -)
Republic of Karakalpakstan	47	54,5	**-7,8**	34	36,5	**-2,9**	8	7	**1,3**
Andijan	10	54,5	**-44,4**	42	36,5	**5,5**	10	7	**2,5**
Bukhara	53	54,5	**-1,9**	38	36,5	**1,5**	11	7	**3,6**
Jizzakh	71	54,5	**17,0**	112	36,5	**75,7**	3	7	**-4,3**
Kashkadarya	9	54,5	**-45,4**	37	36,5	**0,3**	3	7	**-3,8**
Navoi	21	54,5	**-33,9**	67	36,5	**30,4**	10	7	**2,7**
Namangan	15	54,5	**-39,9**	17	36,5	**-19,2**	1	7	**-6,0**
Samarkand	4	54,5	**-50,4**	18	36,5	**-18,5**	4	7	**-3,1**
Surkhandarya	33	54,5	**-21,4**	83	36,5	**46,8**	8	7	**1,2**
Sirdarya	182	54,5	**127,4**	101	36,5	**64,1**	7	7	**-0,3**
Tashkent	5	54,5	**-49,3**	14	36,5	**-22,5**	3	7	**-3,7**
Fergana	9	54,5	**-45,7**	24	36,5	**-12,2**	1	7	**-6,4**
Khorezm	27	54,5	**-27,6**	47	36,5	**10,9**	5	7	**-1,9**
Republic of Uzbekistan	**23**	**54,5**	**-31,9**	**37**	**36,5**	**0.5**	**5**	**7**	**-2.4**

Source: [Compiled by the authors]

The analysis of the data presented in the table shows that the average annual per capita production of watermelon in the country is higher than the established medical norm (36.5 kg) (+0.5 kg). In addition, the share of regions with per capita watermelon production above the established medical standards is very high, as evidenced by the indicators of crops grown in Jizzakh (112 kg) and Sirdarya (101 kg) regions.

If the using of the ninetieth method in the cultivation of melon growing crops and the introduction of opportunities for planting into young orchards is introduced, the existing potential will increase even more. Currently, there are three types of land classification in the cultivation of melon growing crops in our country:
- As the main crop;
- As a secondary crop;
- As an intermediate crop and planted between young orchards.

Due to the structural changes in the agricultural sector of the country, the widespread introduction of the practice of growing melon growing crops as a secondary and intermediate crop in the areas freed from early harvests is an important factor in improving the efficiency of land using and melon growing.

In Sirdarya region, the yield of melon growing crops in 2005-2020 did not grow steadily, however, in the analyzed years, the yield of melons grown in all categories of farmers in the region increased from 193.7 quintals to 200.0 quintals, or 103.1%, watermelon yield increased from 203.2 quintals in 2005 to 211.4 quintals in 2020, an increase of 104%, the average yield of pumpkin increased by 134.3%, from 171.8 quintals in 2005 to 230.7 quintals by 2020 (Table 4).

At the same time, the dynamics of changes in the productivity of farms and dehkan farms were different. The average yield of melons was 184.6 quintals in 2005, 205.2 quintals in dehkan farms, and the average yield in dehkan farms was 111.2% compared to farmers. By 2020, this figure was 340.4 quintals and 102.8 quintals, respectively, on farmers and dehkan farms, which means that the average yield on farms was three times higher

than on farms by 2020. The growth dynamics of average yields on farmers compared to dehkans can also be observed in the production of watermelon and pumpkin products. During 2005-2020, the productivity of farmers' crops in melon growing maintained a stable growth trend compared to dehkan farms.

Table 4. Activities of melon growing in Sirdarya region change in indicators

Indicators	The average horticultural sector in the region			including					
				Farmers			Dekhans farms		
	Melon productivity, (ts / ga)	Watermelon productivity, (quintals/ga)	Pumpkin productivity, (quintals/ga)	Melon productivity, (quintals/ga)	Watermelon productivity, (quintals/ga)	Pumpkin productivity, (quintals/ga)	Melon productivity, (quintals/ga)	Watermelon productivity, (quintals/ga)	Pumpkin productivity, (quintals/ga)
2005	193,7	203,2	171,8	184,6	196,1	162,6	205,2	209,2	181,7
2010	133,0	161,4	115,2	131,2	162,3	117,1	135,8	158,9	112,9
2015	212,1	231,0	181,2	208,1	238,0	192,2	215,6	224,3	173,6
2018	161,6	182,2	140,9	182,3	196,5	142,6	144,1	175,9	139,7
2019	214,5	264,2	145,8	212,7	203,1	43,8	250,3	318,2	222,4
2020	200	211,4	230,7	340,4	302,0	242,1	102,8	295,3	247,6
2020 compared to 2000, (%)	103,1	104,0	134,3	184,4	154,0	148,9	50,1	141,2	136,3

Source: [Compiled by the authors]

In the case of the Sirdarya region, where a monographic study of the decline in farm productivity over the years has been conducted, it can be concluded that inadequate land tenure rights, mainly in farmers, can lead to many disputes over water using.

The results of reforms in the industry can be seen in the increase in economic efficiency of producers, the expansion of sales channels and geography, as well as the increase in exports of agricultural products. Exports, one of the main sales channels of the horticultural industry, maintained growth in 2017-2020 (Figure 2).
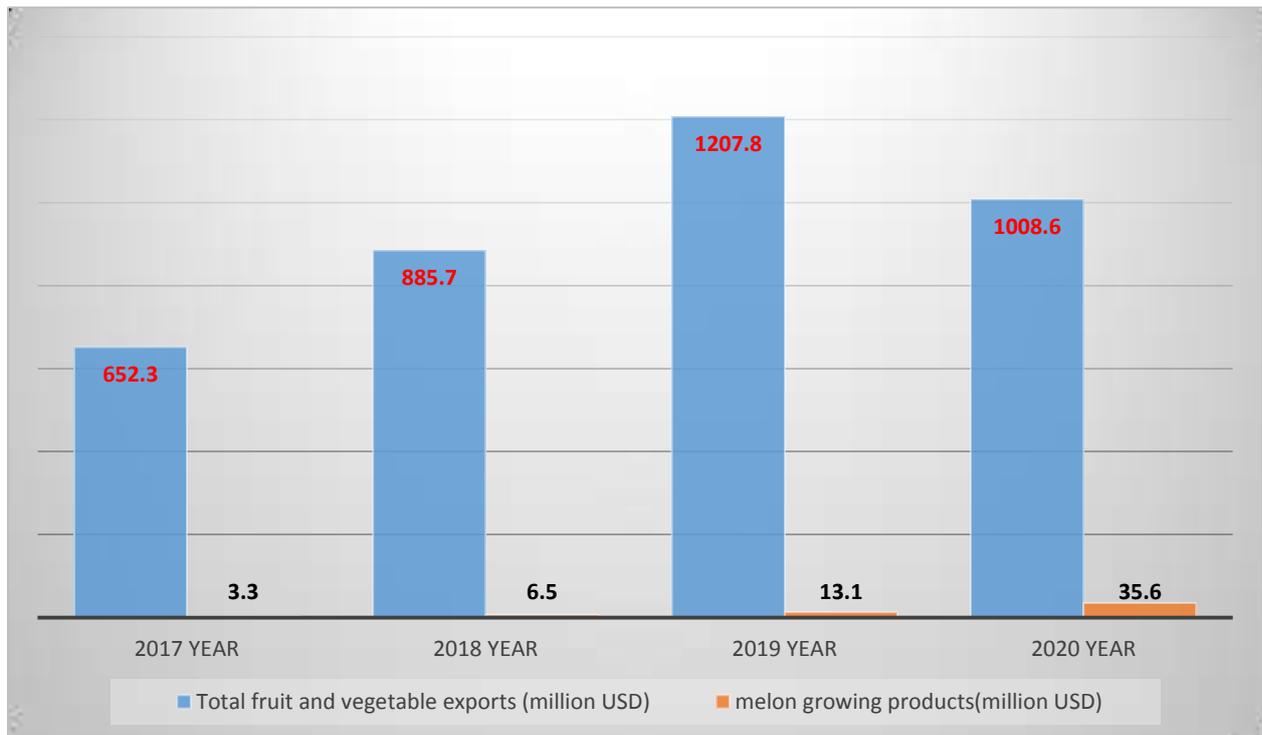
Source: [Compiled by the authors]
Figure 2. Information on the export of melon growing products in the country

The data is showing that in the analyzed years, the volume of fruit and vegetable exports in the country was not stable, but the growth of exports of melon growing products was stable. In 2017, fruits and vegetables were exported in the amount of 652.3 million US dollars, melon growing products were exported in the amount of 3.3 million US dollars, and the share of melon growing products in total fruit and vegetable exports was 0.4%. The country exported a total of 1,008.6 million US dollars' worth of fruits and vegetables, while exports of melon growing products amounted to $ 35.6 million in 2020.

4. CONCLUSION

The share of melon growing products in fruit and vegetable exports in 2017-2020 increased from 0.4% to 3.5%, and exports in 2017-2020 increased from 3.3 million US dollars to 35.6 million US dollars or increased by 10.8 times respectively. At the same time, over the years, the geography of countries exporting melon growing products has expanded. Melons and watermelons grown in the country were exported to 19 countries in 2020. The main importers of melons and watermelons grown in our country are Kazakhstan, Russia, Kyrgyzstan, Ukraine and Latvia.

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