

**REPUBLIC OF AZERBAIJAN**

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**ABSTRACT**

of the dissertation for the degree of Doctor of Philosophy

**REGIONAL AND GEOGRAPHICAL CHARACTERISTICS  
OF THE DEVELOPMENT OF THE FOOD INDUSTRY IN  
THE REPUBLIC OF AZERBAIJAN**

Speciality: 5401.01 – Economic geography

Field of Science: Geography

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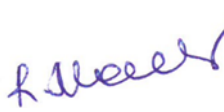
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## GENERAL CHARACTERISTIC OF THE WORK

Providing people with food products has been one of the topical matters at all times. It is no doubt that meeting the physical demand through environmentally-friendly and local products for living is fairly important. Under these circumstances, in the era of globalization, the cumulative population and meeting the demand for food products is one of the pressing issues in the world.

Being one of the substantial areas of the economy, the food industry is being one of the basic areas of socio-economic development, and it plays a pivotal role in ensuring food security. In today's world, there are still certain challenges in the production indicators of the food industry. These include the insufficiency of some raw products, inefficient placement, dependency on imports, a small number of enterprises equipped with state-of-the-art equipment, low quality of some manufactured products.

To improve the regions of Azerbaijan, creating multidisciplinary industrial potential and determine ways to strengthen it, several regulations have been adopted and state programs have been developed. Being one of the non-oil industry sectors, it is necessary to provide the food industry's progress for the productive utilisation from the economic potential of the food industry. This is also a necessity arising from the ongoing development programs. All of these are important factors in achieving the goals of the development of regions, which is one of the essential directions of the state's economic policy.

One of the substantial missions determined by the Food and Agricultural Organisation of the United Nations (FAO) is to supply to obtain secure food products at all times to ensure a healthy and active life of the population<sup>1</sup>. Therefore, one of the crucial forthcoming issues in food safety is to meet the domestic demand through local products.

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<sup>1</sup> FAO. Food and Agricultural Organisation of the United Nations. (statistic periodical), (in Eng.).

It is a fact that establishing Agro-Industrial Complexes, which is providing with raw products, manufacturing export-oriented, competitive, and high-quality products is of special importance in the improvement of the food industry.

Investigating and learning development characteristics of food industry in the regions of Azerbaijan Republic has vital importance. Existence of food industry enterprises ensuring effective use of raw materials and eliminates loss of agricultural products.

There are food industries in Azerbaijan for processing flour and flour products, canned fruits and vegetables, fruit and berry juices, winemaking, butter, vegetable oil, mineral waters, tea, salt, meat and dairy products, fish & fish products and tobacco. Due to the development of these areas, it is possible to make positive progress in the development of the food industry, one of the leading sectors of the economy. The current state of the food industry in the Republic of Azerbaijan and its analysis are important from regional development perspective. Taking into consideration the opportunities for the development of the food industry in the regions, it is possible to ensure the development of natural resources, raw materials, production facilities, labor resources, material and technical base.

In the research work, the food industry sectors, production enterprises, agricultural raw material resources, food security issues in the Republic of Azerbaijan investigated, information provided on existing problems and perspective development opportunities.

It is fairly important to research the improvement of the food industry in the economic-geographical regions, to identify potential opportunities in specific areas in the food industry sector and to develop scientifically based proposals and recommendations to ensure the appropriate use of these opportunities.

**Purpose and objectives of the research.** The *purpose* of the research is to determine the directions of development of the food industry and its sectors in the regions, contemporary ways of territorial organization, challenges in this area and their solutions, to develop proposals of relevant scientific and practical significance for the advancement of the food industry. In order to achieve this goal, the following *objectives* are to be solved:

- to determine the role of natural-geographical and socio-economic factors that create conditions for the development of the food industry;
- to indicate ways to use the potential of agriculture in the regions for the development of the food industry;
- to evaluate economically and geographically the measures taken to develop the food industry during the years of independence;
- to identify ways to increase the potential of the food industry in ensuring food security of the country;
- to determine the essential directions of territorial organization of the food industry in the regions.

**Research methods.** The historical-geographical approach, comparative analysis, statistical, cartographic and other methods were utilised in the implementation of the dissertation.

**Primary defended provisions:**

- Studying economic-geographical factors creating a convenient opportunity for the improvement of the food industry in the regions and opportunities to utilise them;
- A role of the food industry in the provision of the population with the food products, the level of meeting these products demand through domestic production, the ways providing the food safety;
- Importance of implemented work in the years of independence for the increase in the manufacture of the products of the food industry, advancement of the role of this sector ensuring sustainable development;

**Scientific innovation of the research:**

- For the first time, the regional features of the effective territorial organization of the food industry were indicated;
- The importance of the food industry in ensuring food security of the country, ways to increase the role of domestic production in this area have been identified;
- The importance of the food industry in improving the sectoral and territorial structure of the industry in the regions was identified, proposals and recommendations needed to be implemented in this area were developed.

### **The theoretical and practical importance of the research.**

The proposals put forward by the author in the dissertation, the results obtained during the research and suggestions are of high scientific-theoretical and practical importance. The results obtained, proposals and recommendations are important for the development of the food industry in the regions, the implementation of measures to create novel production facilities.

**Approbation and application.** The results obtained during the writing of the dissertation were presented at the following international and national scientific conferences: XXVI Youth International Scientific and Practical Conference, (Novosibirsk, 2015); International Scientific Conference on actual problems of contemporary natural and economic sciences, (Ganja, 2018); III International Scientific Conference of the Young Scientists, (Ganja, 2018); Scientific-Practical Conference: Land management in a market economy: achievements and contemporary calls, (Baku, 2018).

9 scientific articles on the content of the research were published.

**Implementation of the dissertation.** The dissertation was carried out at the department of “Economic and political geography of Azerbaijan” of the Institute of Geography named after acad. H.A.Aliyev, National Academy of Sciences of Azerbaijan.

**Volume, structure and primary content of the dissertation.** The dissertation consists of the introduction, 3 chapters, results and references. The total volume of the dissertation is 130 pages. It contains 25 graphs, 5 map-schemes, 5 schemes, 9 tables, 116 references, including introduction – 5 pages, I chapter – 32 pages, II chapter – 33 pages, III chapter – 47 pages, result – 3 pages, references – 7 pages, appendix – 3 pages. It consists of 34656 signs without tables, graphs, pictures and references.

## **PRIMARY CONTENT OF THE RESEARCH**

**The introduction** provides actuality of the topic and its research level, purpose and mission, methods, the essential provisions of the

defence, scientific innovations, the theoretical and practical importance of the research, approbation and application.

The first chapter of the dissertation was devoted to the **“A position of the food industry in the economic system of the Republic of Azerbaijan”**. This chapter investigates the role of the food industry in the economic system, scientific-theoretical, methodical investigations and the development and formation stages of the food industry. The fundament of the scientific research contains an analysis of natural and socio-economic indicators. The mission of the first chapter consists of factors influencing the advancement of industry and evaluation of development direction based on them. The factors affecting the improvement of this sector were grouped into two groups: production organisation, economic and social factors. The raw material base corresponds to the principle of development of the agrarian sector, protection of the domestic market - the organization of production. Economic and social factors are also related to agricultural producers, farmers, small and medium enterprises and consumers.

In the Republic, A.M.Hajizade, H.B.Aliyev, A.A.Nadirov, A.A.Gurbanzade, R.A.Balayev, S.H.Safarov, M.T.Aliyev, T.N.Aliyev, T.H.Huseynov, Z.N.Eminov, N.A.Pashayev, Z.T.Imrani, G.R.Agakishiyeva, E.S.Badalov and other researchers' treatises the territorial organisation of the areas of the food industry and their development issues were analysed. In addition to this, there is a need to analyse constantly the improvement features of the food industry in the regions.

T.V.Podlegaeva, A.Y.Prosekov, E.M.Smirnov, G.Lanin, A.S.Bulatov, E.Y.Alekseyevich, I.B.Kostin, M.D.Magomedov, A.V.Zazdravnikh, H.A.Afanasyeva, V.P.Jeltikov, I.P.Gurova, T.M.Khudyakova, D.V.Jidkikh, A.A.Zelonovskiy, N.A.Bichkov, N.G.Korolevich, V.I.Petrov, V.V.Karpuzov, H.Moskovitz, S.Saguy, T.Straus, J.A.Vasconcellos and others can be indicated as scholars and professionals who were engaged in the study of the food industry and its areas in foreign countries.

The regional-geographical characteristics of the food industry in the Republic of Azerbaijan were investigated in the dissertation.

Enterprises operating in the field of the food industry in the country can be compartmentalised into the following groups:

- Large companies operating in the food sector - Azersun, Gilan, Cahan;

- regional processing enterprises that were previously operating and later underwent a reorganization of the management and production structure;

- small-scale enterprises created by individual entrepreneurs.

According to the sectoral structure of the industrial production, in the year 2019, 9,0% of the total industry was constituted by the food industry, including 7,6% by the production of the food products, 0,9% by the production of beverages, and 0,5% by tobacco production. 5,2% of the GDP (Gross Domestic Product) was accounted for by the food industry in 2019. The proportion of the food industry in the sectoral structure of the industrial production almost tripled rising from 3,7% to 9,0% over a fourteen-year period between 2005 and 2019, the reason is that the novel production enterprises have been operating in the regions since then<sup>2</sup>.

In 2019, 449 out of 586 enterprises operating in this field are operating on the basis of food production<sup>3</sup>. In accordance with the requirements of a market economy, the main advantage of changes in production is private enterprises. One of the determining factors of the food industry in the economic system is the number of employees in this sector, as well. The number of workers in this sector increased from 13,0 thousand people to 21,6 thousand people between 2005 and 2019<sup>4</sup>, this sector provides a favourable opportunity to supply people with business opportunities because it is one of the labour-intensive sectors. According to the analyses of the statistical materials, it was determined that the most significant share of the food industry was constituted by flour and bakery products with 57,9%, making it approximately two times higher than that of meat and dairy products at 19,5%. Canning production formed 3,6%, just

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<sup>2</sup> Industry of Azerbaijan – 2006, 2019 - Baku: SSC, – 2020. - p.15., (in Aze.).

<sup>3</sup> Industry of Azerbaijan – 2019. – Baku: SSC, – 2020. – p.36., (in Aze.).

<sup>4</sup> Industry of Azerbaijan – 2007. – Baku: SSC, – 2008. – p.38., (in Aze.).



behind sugar production at 6,5%, and the remaining 12,7% was formed by the production of the other products<sup>5</sup>.

To determine the development level of the food industry, one of the prevalent methods is the indicators of per capita production (Table 1).

**Table 1**

**Meeting the food products demand in the food industry through domestic production, 2019**

Products	Consumption per capita, annual with kilogram	Consumption by the total population (tonne)	production – tone
Flour	84,6	838446	1781700
Refined rice	5,9	58890,85	11 070
Cereal	2,5	24953,75	6 578
Fresh bread without syrup, eggs, cheese or fruit jam	125,5	1252678,25	1 256 400
Roasted bread and biscuits, long-term confectionery	2,3	22957,45	8 092
Cocoa, chocolate and sugar confectionery	3,0	29944,5	9 677
Pasta	1,6	15970,4	4200
Vegetable oil	16,1	160702,15	75100
Margarin	3,6	35933,4	47269,2
Canned fruits and vegetables	17,0	169685,5	191500
Milk and cream with a fat content of 1-6%	96,9	967207,35	962 039
Cream with a fat content of more than 6%	0,7	6987,05	7 620
Butter	3,3	32938,95	24100
All kinds of cheeses	5,8	57892,7	51 357
Sugar	26,3	262513,45	271000
Tea	2,2	21959,3	9800
Salt	5,3	52901,95	74672,3
Unsweetened mineral and carbonated waters	4,1	40924,15	143087,9
Sweetened mineral and carbonated waters	3,0	29944,5	96154,7

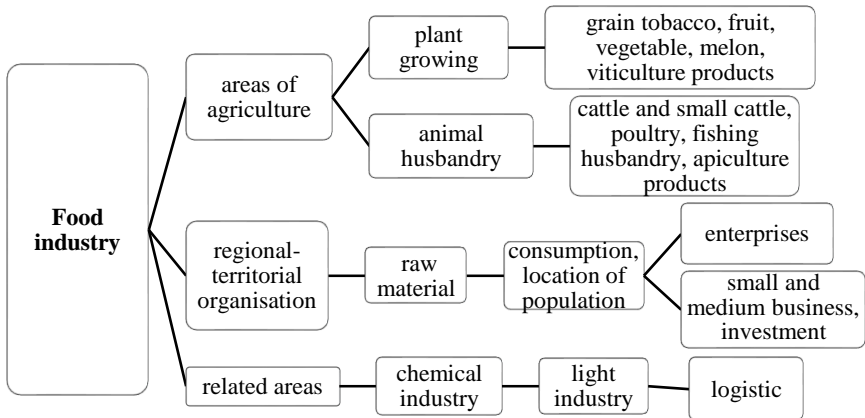
*Source: Food balances of Azerbaijan-2019, Baku, SSC, 2020 <sup>6</sup>*

<sup>5</sup> Industry of Azerbaijan – 2019. – Baku: SSC, - 2020, – p.53., (in Aze.).

A sociological survey "Provision with food industry products" was conducted among a certain part of the population. According to the survey, one of the essential problems is that the selling price of some products does not fit into the budgets of low-income families. Examples are butter, fish and fish products, olive oil, dried and frozen fruits, sugar confectionery, semi-finished products, cream, sausages. Along with local production, some of these products are paid for by imports.

According to the table, the products needed to increase production to meet the annual consumption needs of the country's population include rice, cereals, sugar and biscuits, long-lasting confectionery, cocoa, chocolate and confectionery, pasta, vegetable oils, natural tea, butter. There is a need to improve the production of olive oil among vegetable oils.

The second chapter of the dissertation is devoted to the study of "**The current state of development of the food industry in the regions of Azerbaijan**". This chapter examines the impact of agriculture on the development of the food industry, the issues of territorial organization of crop and livestock production in the regions.



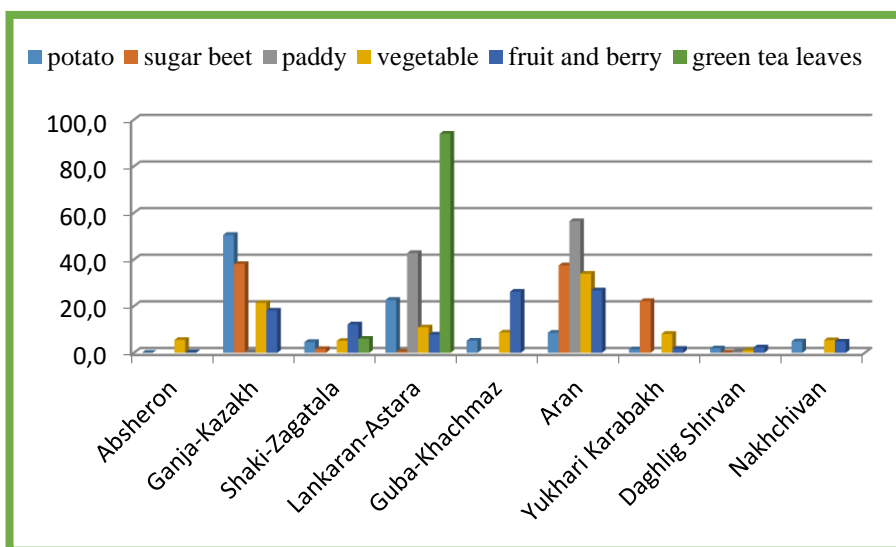
*Note: The scheme was prepared by the author.*

**Scheme 1.** Scheme of the food industry of Azerbaijan

<sup>6</sup> Food balances of Azerbaijan – 2019. – Baku: SSC, – 2020. – p.81., (in Aze.).

Scheme 1 identifies areas that affect the development of the food industry. Basically, agriculture, important factors in the organization of regional territory and other industries to which the food industry is connected. As the essential raw material base is agricultural products, the supply of raw materials is one of the most important issues.

While analysing the role of the food industry in the composition of the Agro-Industrial Complex, it is necessary to note the factors affecting its development. The relationships with the agriculture, regional-territorial organisation and other sectors of the industry should be included in triggering factors. Scheme 1 indicates the composition of the food industry in Azerbaijan and related areas.



Source: *Agriculture of Azerbaijan, SSC, 2020*<sup>7</sup>

**Graph 1.** Production of the agricultural products by the economic-geographical regions, %

According to graph 1, the production of agricultural products in the economic-geographical regions is provided with a percentage. According to the analysis, the productivity of sugar beet, paddy, green tea leaves is relatively lower, and increasing productivity plays

<sup>7</sup> Agriculture of Azerbaijan – 2020. – Baku: SSC, – 2021. – p.409., (in Aze.).

an important role in meeting domestic demand. The vegetable, fruit and berries are almost grown in all economic-geographical regions. In the year 2019, almost a half of the potato production by country (50,6%) fell to Ganja-Kazakh's share whereas this figure for the Lankaran-Astara was approximately two times lower than that standing at 22,7%, and the remaining 26,7% of the production was produced in Shaki-Zagatala, Guba-Khachmaz, Aran, Yukhari Karabakh, Daghlig Shirvan, Nakhchivan economic-geographical regions. Turning to the sugar beet production, Ganja-Kazakh was the first on the list with 38,1%, just ahead of Aran at 37,5%. This share for the Yukhari Karabakh was slightly lower than that standing at 22,2%. The remaining 2,2% fell to the Shaki-Zagatala, Lankaran-Astara, Daghlig Shirvan. With respect to the paddy, interestingly, the most significant part of the total production (56,5%) was constituted by the Aran making it considerably higher than that of Lankaran-Astara at 42,7%. Ganja-Kazakh was the last with 0,8%. Regarding green tea leaves, the vast majority of the total production was accounted for by the Lankaran-Astara (94,0%) while the small minority of the production was formed by the Shaki Zagatala (6,0%)<sup>8</sup>. Self-sufficiency in the supply of fruits and vegetables in Azerbaijan is at 100%. There is a need to increase domestic production and increase self-sufficiency in the supply of sugar, natural tea, cereals and legumes.

According to the type of raw materials produced, food products are divided into three areas:

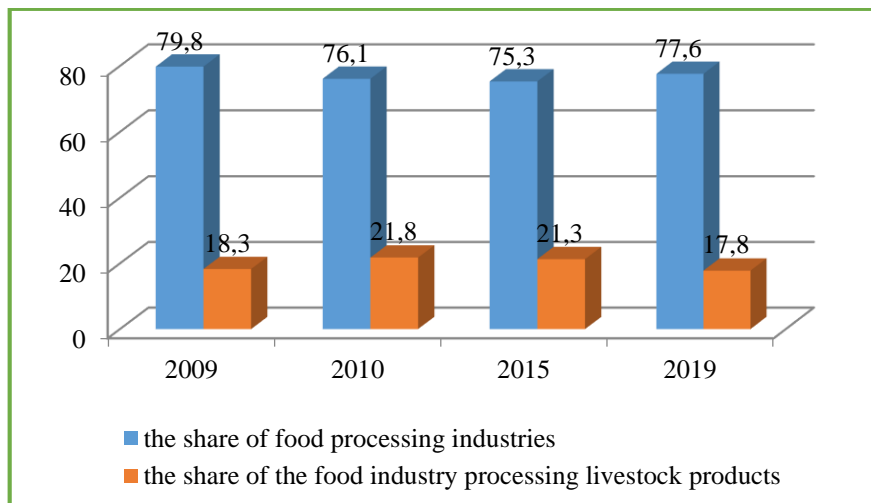
1. Areas of the food industry that process crop products
2. Areas of the food industry that process livestock products
3. Processed food not related to agriculture production of industrial products.

In 2019, the share of food processing industries processing crop products was 77,6%, the share of food processing industries processing livestock products was 17,8%, the share of non-

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<sup>8</sup> Agriculture of Azerbaijan – 2020. – Baku: SSC, – 2021. – p.409., (in Aze.).

agricultural processed food processing industries (salt, mineral and carbonated waters, soft drinks) was 4,6%<sup>9</sup>.



Source: *Industry of Azerbaijan. SSC. 2012, 2016, 2020*<sup>10</sup>

**Graph 2.** The share of the food industry areas producing crop and livestock products by the country, %.

According to graph 2, the decline was experienced in the share of the areas producing crop products. The underlying reason for the decline was the low supply of raw materials used for the production of rice, cereals, sugar beet which is the raw material from sugar production, and the raw material used for the production of the natural tea.

There was a slight decrease in the share of livestock processing industries, which include butter, cheese and cottage cheese from dairy products, cream with a fat content of 6-29%.

Based on statistical indicators in the research paper, the territorial organisation characteristics of the areas producing crop and livestock products was researched.

<sup>9</sup> Industry of Azerbaijan – 2020, – Baku: SSC, – 2021, – p.57., (in Aze.).

<sup>10</sup> Industry of Azerbaijan – 2019, – Baku: SSC, - 2020, – p.53., (in Aze.).



It was concluded that it is important to increase the production of raw materials, especially for natural tea and sugar, there is a need to raise the production of butter, rice, cereals, olive oil on the basis of raw materials. Production of high-quality and competitive products will increase the export capacity of a product. There is a demand for quality products both inside and outside the country.

In order to increase the production of crop and livestock products in the country, it is important to develop agricultural areas in the regions that meet local natural and economic conditions, and on this basis, the relevant food industries. It should also be noted that the weak development of the raw material base limits both the expansion of the production capacity of specialized food industries and the creation of new ones.

In Figure 1, the production of important types of products was analyzed by regional division and it was determined that 86,9% of the flour and bakery products were manufactured in the city of Baku, Absheron economic-geographical region, 39,3%, 37,3%, 15,9%, 1,7%, 1,1% 4,7% of the production of fruit juice fell to Gabala, Aghsu, Goychay, Sabirabad, Ujar, Balakan districts, respectively. 29,3%, 21,4% 16,7%, 4,6%, 0,7% 15,8% of the grape wine production fell to Absheron, Ganja, Ismayilli, Goychay, Shaki and other districts, in turn. 68,9% and 31,1% of the natural tea production was produced in the Absheron and Lankaran, respectively. Lastly, turning to the dairy products, the Absheron was the first on the list with 56,9%, making it two times higher than Kurdamir at 26,5%. The shares of Baku, Aghcabedi and other districts were under 10% standing at 7,0%, 7,5% and 2,0%, respectively<sup>11</sup>.

Increasing the manufacture of products with low production rates, first of all, conditions to increase the supply of raw materials and expands the activities of profitable enterprises. Unlike other industries, the food industry produces daily consumer goods. Along with increasing production, the production of quality products should be a top priority. Because a quality product is also competitive, the

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<sup>11</sup> Industry of Azerbaijan – 2020, –Baku: SSC, - 2021.-p.78., (in Aze.).

demand for this product is likely to be high both in the country's market and when it is released in abroad.

**Table 2**

**Assessment of the territorial organisation of the production companies and the food industry areas in the regions**

Factors that will have a positive impact on the territorial organization of the food industry and production enterprises in the regions:	Factors negatively affecting the territorial organization of food industry and production enterprises in the regions:
specialization in the production of products in accordance with the natural conditions of each economic-geographical region	a small number of enterprises with large and small production capacity
measures are taken by the state for the development of entrepreneurship, investment attractiveness	lack of raw materials for the production of some crop and livestock products and imports from foreign countries
employment of the population as a result of the creation of new enterprises, restoration of some of them and creation of job opportunities	lack of proximity of production facilities to raw material sources creates certain problems
export of high-quality products to foreign countries increases economic income	lack of qualified personnel, quality of products, relatively low competitiveness

The third chapter of the dissertation is entitled "**Prospects for regional development of the food industry in the Republic of Azerbaijan.**" This chapter examines the opportunities for regional development of the food industry, government programs for the development of the food industry and the importance of the food industry in the food supply. Research in this area is conducted by foreign and local scientists, as well as international organizations.



As food supply is a global challenge, the Food and Agriculture Organization of the United Nations (FAO) cooperate with international food organizations in the world, as well as in the country.

The Food and Agriculture Organization of the United Nations (FAO), the World Bank, the International Fund for Agricultural Development (IFAD), the International Monetary Fund and other organizations are analyzing food security in the world. The main goal of international organizations is to provide everyone with a minimum standard of living, to eliminate problems in the field of food security<sup>12</sup>.

**Table 3**

**Annual consumption norms of the primary types of food products in 2019 on the minimum consumer basket, kg**

Products	On average per person*	Consumption of the food industry products
Bread and bakery products (by turning into flour)	126,1	210,1
Potato	50,6	82,2
vegetable and melon products	97,0	127,7
Fruit and berries	45,9	80,4
Meat and meat products	31,5	40,8
Mild and dairy products (by turning ito milk)	232,3	246,3
Fish and fish products	7,7	7,6
egg, pieces	153	165
sugar and confectionery (by converting to sugar)	17,4	28,6
vegetable oils, margarine and other fats	9,8	16,1
Butter	6,7	3,3

Source: Food balances of Azerbaijan – 2019. Baku: SSC, 2020.<sup>13</sup>

Table 3 indicates the minimum consumption norms and consumption indicators in the country.

According to the table, the most consumed products include bread and bakery products from flour products, fruits and vegetables,

<sup>12</sup>FAO. Statistical Pocketbook World Food and Agriculture, Rome, 2019., (in Eng.).

<sup>13</sup> Food balances of Azerbaijan - 2019, - Baku: SSC, -2020.-p.84., (in Aze.).

vegetable oils, meat and dairy products. Products consumed below the minimum consumption norm include butter, fish and fish products. There is a need to increase domestic production to meet the demand for these products.

Proper placement and specialization of crop and livestock areas is a key condition for the high level and cost-effective development of the food industry. It should be taken into account that since the primary source of raw materials is agricultural products, it is possible to swell productivity by obtaining high results from the measures taken in the conditions of proper specialization and intensification (agro-technical measures, mechanization, etc.).

Provision of the population with food is one of the urgent issues. Ensuring food security is based on agricultural production indicators. In this regard, it is important to conduct economic and geographical analysis to ensure food security.

Examples are provided using the experience of 3 countries (Turkey, Kazakhstan, Belarus) in the preparation of indicators of the level of self-sufficiency in paying for food security through domestic production<sup>14</sup>. The following results have been obtained to increase food security in these countries through domestic production:

- technology of soil cultivation, cultivation of seed-productive seeds, use of quality seed sorts;
- increasing the productivity of agricultural lands, maintaining soil fertility, application of mineral fertilizers;
- development of the agrarian sector, an increase of incomes of the rural population, efficient use of investments, supply of production and technical base with contemporary equipment;
- increasing labour productivity significantly, and ensuring development;
- organization of loss-free sales processes of the farmer's products.

State programs aimed at meeting the population's demand for food products and developing food security are being implemented.

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<sup>14</sup> FAO. Statistical Pocketbook World Food and Agriculture, Rome, 2019., (in Eng.).

Within the framework of the programs, a number of state-important measures have been taken to improve the production facilities and raw material base in order to increase the production of food products in the country and meet the needs of the population for food products through domestic production and novel enterprises have been operated in the regions.

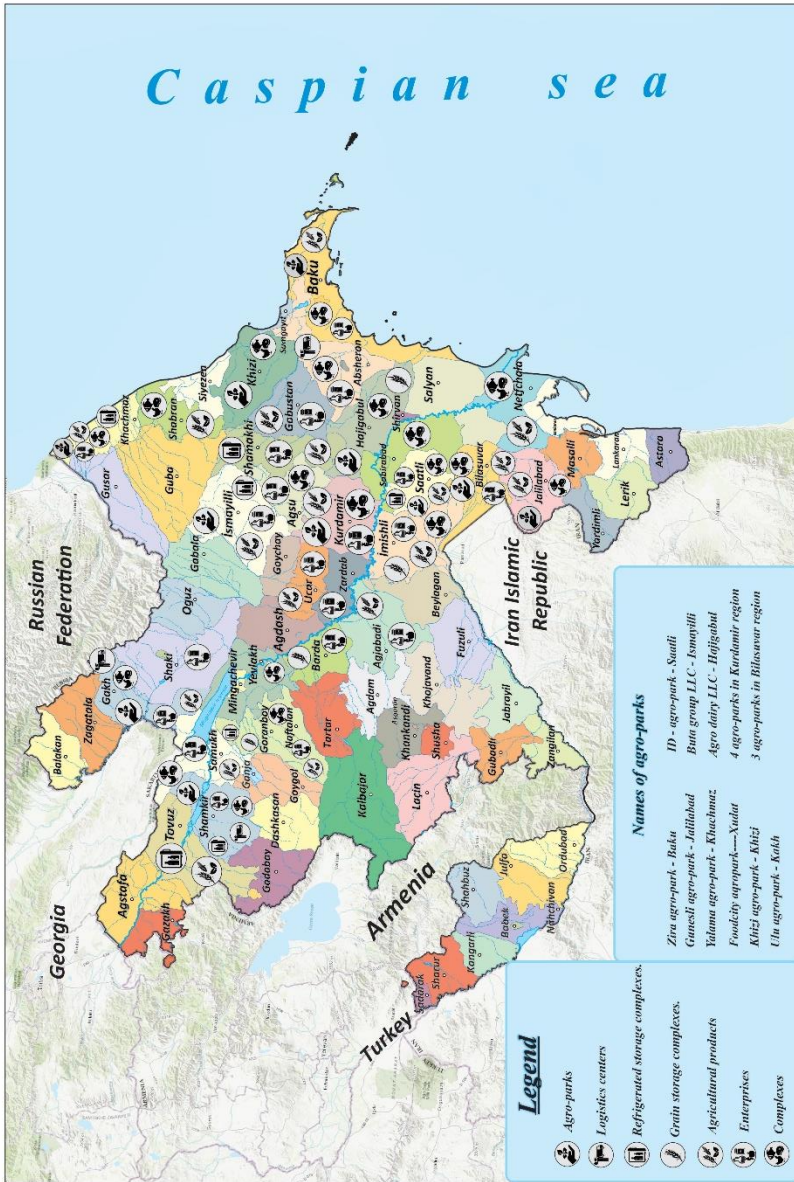
The state programs implemented in the development of the food industry in the regions were of special importance. In accordance with the requirements of the state programs "Socio-economic development of the regions" (2004-2008, 2009-2013, 2014-2018, 2019-2023), which have been gradually implemented since 2004, large and small production facilities have been established in the regions and the activities of many enterprises have been restored. The cannery in the Khachmaz region, wine production enterprises in Ganja, Goygol and Shamkir districts were restored. Sugar processing in Imishli district, Gabala "Gilan" canned fruits and vegetables, frozen and dried fruit processing in Balakan, Zagatala districts, glucose processing in Oghuz district, oil factory in Sumgayit, and other newly established enterprises have started operating.

Milk and dairy products production in Baku "Milk" pro.ltd, Taimeks, Az Food Company, Hokmali settlement, Agstafa, Agjabadi, Saatli, Tovuz, Gabala, Bilasuvar, Kurdamir, Barda, Lankaran districts and Nakhchivan economic-geographical region processing enterprises with small and large production capacity have been established.

"State program on the reliable food supply of the population in the Republic of Azerbaijan for 2008-2015" has been developed. Large farms in Agjabadi, Beylagan, Kurdamir, Aghsu, Imishli, Hajigabul, Jalilabad, Salyan, Khachmaz, Fuzuli, Saatli, Shamakhi, Yevlakh, Agdash, Shamkir, Siyazan, Ismayilli, Samukh and Shamkir districts in order to increase the payment for the food supply of the population through local production was created<sup>15</sup>.

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<sup>15</sup> State program on the reliable food supply of the population in the Republic of Azerbaijan (2008-2015), – Baku: – 2008, – 51 p., (in Aze.).



**Figure 2.** Territorial organisation of the agro-parks in the Republic of Azerbaijan

Food security refers to the level of food self-sufficiency through domestic production. The research analyzed products with a level of self-sufficiency of close to 100%. It was determined that products with a level of self-sufficiency of close to 100% include flour, fresh bread without syrup, egg, cheese or jam, margarine, fruit and vegetable juices, canned fruits and vegetables, dairy products, salt, mineral and carbonated waters. Products that need to increase self-sufficiency include rice, cereals, sugar confectionery, pasta, raw materials for sugar production, natural tea, vegetable oils.

One of the measures taken towards ensuring food security, increasing productivity in agriculture, rise the production of food products is the creation of agro-parks. In accordance with the action plan arising from state programs, the process of establishing agro-parks in the regions has been implemented.

Figure 2 illustrates the characteristics of the location of agro-parks by regions. At the initial stage, it is planned to create 45 agro-parks across the country. The study included information on agro-parks established in the regions. The establishment of agro-parks in the country began in 2014.

Up to the present, agro-parks have been put into operation in Shamkir, Khachmaz, Zira settlement of Pirallahi district, Jalilabad, Goranboy, Ismayilli, Kurdamir and Khizi districts. Vegetables are grown in “Baku Agropark” in the Zira settlement. The enterprises focusing on the cultivation, sorting and packaging of agricultural products, storage warehouses, logistics centres, livestock complexes, production operate in the Khudat settlement of the Shamkir District (“Foodcity”), “Yalama” agro-park in the Khachmaz district, “Guneshli” agro-park in the jalilabad district, three agro-parks in Bilasuvar district, and other built agro-parks located in the Ujar, Zardab, Aghsu, Shamakhi, Samukh, Gakh districts.

Food safety laboratories have been established in the country to provide the population with quality, safe products. The State

Program on ensuring food security in the Republic of Azerbaijan (2019-2025) has been developed<sup>16</sup>.

**Table 4**

**Proposed table for perspective development of food industry in economic-geographical regions**

Economic-geographical region	Sectors and sub-sectors of the food industry
Absheron	dried fruit processing, olive oil production, confectionery, semi-finished products production enterprises
Ganja-Kazakh	production of pasta, confectionery, semi-finished products, vegetable processing enterprises, starch production
Guba-Khachmaz	fruit and berry processing, dried fruit processing /hazelnuts, chestnuts, walnuts/, meat and dairy production, confectionery production enterprises
Aran	vegetable oils /corn, sunflower/, vegetable processing enterprises, fish products, wine products, meat and dairy products supply companies
Lankaran-Astara	processing of natural tea, rice, production of the citrus plants /juices, drying and freezing/, vegetable processing, sunflower oil processing enterprises
Nakhchivan	dried fruit processing, meat production enterprises
Shaki-Zagatala	meat and dairy processing enterprises, confectionery, natural tea, fruit and berry processing, hazelnut processing enterprises
Daghlig Shirvan	meat and dairy products, broiler poultry, soft drinks, grain processing enterprises

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<sup>16</sup> State Programs on the provision of the food security in the Republic of Azerbaijan (2019–2025), – Baku: – 2019, – 17 p., (in Aze.).

The existing areas of the food industry operating currently in the economic-geographical regions and the creation of the novel sectors were proposed in table 4.

It is planned to improve tax services provided to entrepreneurs, accelerate the privatization process of enterprises declared open for privatization, and implement measures to support entrepreneurial activity in the production, supply and processing of agricultural products<sup>17</sup>. In order to develop small and medium enterprises and increase employment, ABAD households operate in Baku, Masalli, Balakan, Ismayilli, Shamakhi, Guba, Beylagan, Zagatala, Oghuz and Fizuli districts to produce various products. Action plans have been envisaged and implemented to provide the country's population with food industry products through domestic production.

In the sub-chapter named "**Regional development opportunities of the food industry**", perspective ways for the development of the food industry in each economic-geographical region were studied and suggestions were provided. From the analysis of the perspective directions of development of the food industry in the regions, it can be concluded that there are favourable natural conditions for the development of several areas in the economic-geographical regions.

## **RESULT AND SUGGESTIONS**

1. Being studied the economic potential and natural condition of the regions, the emerging contemporary changes in the structure of the food industry were determined on basis of the systematic approach to their development characteristic. Although the share of the food industry in the sectoral structure of the industrial production was 3,7% in the year 2005, this indicator reached 9,0% in 2019. The primary predominance in there was accounted by the manufacture of the food products (7,6%), beverage production with 0,9% and tobacco production with 0,5% [1].

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<sup>17</sup> State Programs on the socio-economic development of the regions of Azerbaijan (2009 – 2013), – Baku: 2010, – 354 p., (in Aze.).

2. During the first years of the independence, there were crucial changes in the sectoral and territorial structure in the period of implementing agrarian reforms in the direction of the advancement of the food industry in the regions. The production of flour products, meat and dairy products, salt, mineral and carbonated water products, canned fruit and vegetables, sugar among the products of the food industry experienced an increase. There was a decrease in the production of wine, natural tea, pasta and tobacco products [5].

3. The analysis of the factors determining the establishment of enterprises producing food products in the regions, the expansion of entrepreneurial activity in this area was carried out, and ways to increase production were identified. Thus, development was achieved in crop and livestock production. In 2019, 77,6% of the food industry products were crop production, 17,8% livestock processing, and 4,6% was constituted by salt, mineral and carbonated water, and soft drinks.

4. In modern times, the dynamics of development of the food industry was assessed, the work carried out within the framework of state programs was analyzed [7].

5. According to the action plan envisaged in the state program on "Reliable food supply of the population in 2008-2015", the provision of the population with food products through domestic production has been identified as a priority. The low level of local self-sufficiency in some products is due to a shortage of raw materials. Increased productivity is required in terms of the supply of raw materials for the production of cereals (rice, cereals, buckwheat), sugar beet, natural tea, vegetable oils (olive oil) [2, 8].

**The following scientific works were published in accordance with the topic of the dissertation:**

1. Babayeva, Z.R. Economic and geographical problems of development of food industry in the Republic of Azerbaijan // – Baku: Works of young scientists, – 2014, №10, – p.75-78., (in Aze.).



2. Babaeva, Z.R. Grain production in the Republic of Azerbaijan: problems and solutions // Collection of materials “XXVI International Youth Scientific and Practical Conference”, – Novosibirsk: March 11 – 2015, – p.16-20., (in Russ.).

3. Babayeva, Z.R. The primary development priorities of the food industry in the Republic of Azerbaijan // Works of the Azerbaijan Geographical Society, XX volume. – Baku: – 2017, – p.457-462., (in Aze.).

4. Babayeva, Z.R. Development trends of the food industry in modern times // International scientific-practical conference on “Actual problems of modern natural and economic sciences”, – Ganja: 4-5 May – 2018, – p.5-9, (in Aze.).

5. Babaeva, Z.R. The role of the food industry in improving the sectoral structure in the cities of the Republic of Azerbaijan // – Kyiv: Ukrainian Geographical Journal, Suspilne Geographical Research, – 2018 (3), – p.57-63., (in Russ.).

6. Babayeva, Z.R. Development trends of crop production in the regions // III International Scientific Conference of Young Scientists, – Ganja: October 17-18 - 2018, – p.196-199, (in Aze.).

7. Babayeva, Z.R. Sustainable growth trends of agricultural production in the regions of Azerbaijan // Conference on “Land Management in a Market Economy: Achievements and Modern Challenges”, – Baku: May 7 – 2018, – p.252-260, (in Aze.).

8. Babayeva, Z.R. Problems of development of plant growing in the regions of Azerbaijan and the role of this field in food supply // Journal of Geography and Natural Resources, – Baku: – 2019, №1 (9), – p.61-68., (in Aze.).

9. Babaeva, Z.R. The importance of state programs for the socio-economic development of regions in improving the sectoral structure of the food industry // – Simferopol: Scientific journal, Crimean Federal University named after V.I. Vernadsky, Geography and Geology, – 2020, – p.30-41., (in Russ.).



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