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THE DEVELOPMENT AND CURRENT STATE OF THE AGRICULTURAL SECTOR IN THE REPUBLIC OF KAZAKHSTAN

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The performance of the agricultural market has the significant impact on maintaining the food security within the Republic of Kazakhstan. Therefore, the purpose of this research paper is to describe the current strategic position of the agricultural market of Kazakhstan. The research has value because its results may help the future researchers in defining the policies and recommendations for developing the agricultural sector of the Republic of Kazakhstan. The research methodology is based on the philosophy of epistemology because this paper is concerned whether the current strategic position of the agricultural sector in the Republic of Kazakhstan should be treated as the fact. Moreover, the presence of economic trends and links within the agricultural sector of the Republic of Kazakhstan would be evaluated through applying various scientific methods. The research results show that the gross output level in the agricultural sector of Kazakhstan in 2019 equals to 5151163 million tenge. Moreover, the following key success factors were found for the agricultural market in Kazakhstan: prices, innovation, creating trust with the consumers.

Key words: agricultural market, Kazakhstan, innovation, efficiency, strategic analysis.

Introduction

Defining the successful model for developing the agricultural sector of the Kazakhstan should start from shaping the strategy [1]. Describing the strategic framework that could work for the case of the Republic of Kazakhstan through application of different analytical methods and techniques is the aim of this research. The agricultural sector of the Republic of Kazakhstan has one of top priorities for the national safety due to the significance of the food safety in the framework of the global economic security concerns. The analytical part consists of four different parts: analysing stakeholder power; external macroenvironmental and internal analyses which question what kind of strategic and tactical issues Kazakhstani agricultural sector may face.

Literature review

The role of flexibility in defining the potential paths for developing any sector of the economy is not fully exploited in the Central Asian region. It is worth mentioning that availability of the limited resources and inability to control every possible outcome due to the complicated nature of the international cooperation may not allow to achieve every defined goal in the development strategy [2]. Therefore, in order to develop the comprehensive list of recommendations for any sector of the economy would require very deep understanding of the current state of that economic sector. Maintaining flexibility in terms of achieving development goals could become the competitive advantage to meet the peaks and fluctuations within the global economy [3]. As a result, one of the most important steps in defining the current strategic position of the agricultural sector of the Republic of Kazakhstan is to decide which economic models, theories and concepts should applied upon analysing the agricultural market.

It is worth noting that needs of the consumer community have the significant impact upon how the agricultural market operates [4]. It is worth also noting that not only the local population but also commodity and food product factories may be considered as consumers in the agricultural sector [5]. The importance of understanding the current strategic position of the agricultural sector could be related to referencing to the hierarchical order for the human needs defined by Maslow's theory [6].

This theory states that the lower level for the human needs has to be satisfied before an individual may start considering the higher ones as significant [7]. Eating should be considered as the lowest level of the human needs and without satisfying the survival would not be possible [6, 7]. Therefore, understanding the current state of the agricultural sector, which helps to satisfy the lowest level of Kazakhstani population needs, is an important step in providing the food security in the internal market. Moreover, developing the agricultural sector in the Republic of Kazakhstan is one of the most significant instruments in maintaining the national security.

Methodology

The research methodology is based upon the philosophical stance of positivism because:
- the research purpose of defining the current strategic position of the agricultural market in Kazakhstan is testable;
- it is impossible to draw any conclusions without relying on the statistical analysis;
- the research results are generated through testing relationships that are present;
- the research data is coming from the observable reality.

The research takes place in the period after the coronavirus pandemic has already negatively impacted the global economy and the regional food markets. Therefore, the research results could become useful for the future researchers who would try to define measures of recovering the national economy in the post-COVID-19 period.

Results and discussion

Industrial output analysis

The industrial output analysis could be considered as one of the first steps towards understanding the current structure of the agricultural market in Kazakhstan.

According to the Bureau of national statistics in the Agency for strategic planning and reforms in the Republic of Kazakhstan (2020) the industrial output for the food products in the internal market is the following [8]:
- in 2018 – 1527.687 million tenge;
- in 2019 – 1708.013 million tenge.

The analysis of the data above demonstrates that the standard deviation for the food product output between 2005 to 2019 equals to 435773.562. The first quartile for the same value from 2005 to 2019 equals to 626621.7325 million tenge. On the other hand, the third quartile of the industrial output for the same period is 1275938.5 million tenge. Therefore, the interquartile range of the food product output in the Republic of Kazakhstan between 2005 to 2019 is going to be equal to 649316.7675 million tenge.

It is worth mentioning that the total output for the agricultural sector overall and for the food products (only) are not the same indicators. Therefore, there is the need to define the gross output level of the agricultural sector in the Republic of Kazakhstan [8]:
- in 2005 – 749077.8 million tenge;
- in 2017 – 4070916.8 million tenge;
- in 2018 – 4474088.1 million tenge;
- in 2019 – 5151163 million tenge.

The interquartile range of the gross output level in the agricultural sector of Kazakhstan between 2005 to 2019 is equal to 1972778.9 because the first quartile for the same value equals to

1522922.5 million tenge and the third quartile - 3495701.4 million tenge. The median value for the agricultural gross output is 2720453.4 million tenge for the same periodю

The agricultural sector of the Republic of Kazakhstan includes two major sectors of the economy as the agrarian sector and the animal husbandry.

The gross output of the agrarian sector in Kazakhstan for the mentioned period of time looks the following way [8]:

- in 2005 – 389526.6 million tenge;
- in 2017 – 2249166.9 million tenge;
- in 2018 – 2411486.7 million tenge;
- in 2019 – 2817660.6 million tenge.

The median value for the total industrial output in the agrarian sector of the Republic of Kazakhstan from 2005 to 2019 is 1654428.5 million tenge. The industrial output analysis demonstrates that the first quartile for the same indicator between 2005 to 2019 is 832832.4 million tenge while the third quartile - 1936408.75 million tenge. Therefore, the interquartile range for the gross output of the agrarian sector equals to 1103576.35 million.

The total output in the animal husbandry for the same period may be defined in the following way [8]:

- in 2005 – 355786.3 million tenge;
- in 2017 – 1810914.1 million tenge;
- in 2018 – 2050455.8 million tenge;
- in 2019 – 2319496.7 million tenge.

The average value for the gross output in the animal husbandry from 2005 to 2019 equals to 1174674.9 million tenge while the median value - 1145437.3 million tenge.

To sum up, the analysis above demonstrates that the gross output for the food products (only), the agrarian sector, the animal husbandry and the agricultural sector (overall) show growth patterns between 2005 to 2019. Therefore, the industrial output analysis shows that the agricultural sector of the Republic of Kazakhstan was experiencing overall growth trends from 2005 till 2019 in terms of the gross output.

Stakeholder analysis

The gross output growth or decline in any industry could be affected by the stakeholders. There are several concepts that have significance in the stakeholder framework analysis [9]. Moreover, different countries around the would have different financial climate which would impact the economic prospects of the ventures operating in those countries [10]. In addition, every sector of any national economy may also have its own microclimate which may impact different economic parameters as ease of doing business.

Therefore, there is the need to analyse the overall structure of the agricultural sector of the Republic of Kazakhstan in order to determine the primary and secondary stakeholders in the market. According to the Bureau of national statistics in the Agency for strategic planning and reforms in the Republic of Kazakhstan (2020) there are 17403 registered legal entities in Kazakhstan that either operate or provide services to the enterprises that operate in the field of the agrarian sector, animal husbandry and hunting (for the first of January 2020) [11]. On the other hand, there are 1638561 units of farm households in settlements, villages, and the rural districts of the Republic of Kazakhstan (in total) or:

-in Akmola region – 124213 units;
- in Aktobe region – 54114 units;
- in Almaty region – 294 998 units;
- in Atyrau region – 51558 units;

- in West Kazakhstan region – 76260 units;
- in Jambyl region – 123916 units;
- in Karaganda region – 89711 units;
- in Kostanay region – 111617 units;
- in Kyzylorda region – 86050 units;
- in Mangystau region – 60025 units;
- in Pavlodar region – 66435 units;
- in North Kazakhstan region – 96478 units;
- in Turkestan region – 255449 units;
- in East Kazakhstan region – 147737 units.

On the other hand, there were 211740 farming entities on the first of January 2020, including [11]:

-in Akmola region – 5507 units;
- in Aktobe region – 6670 units;
- in Almaty region – 45123 units;
- in Atyrau region – 2746 units;
- in West Kazakhstan region – 7302 units;
- in Jambyl region – 18075 units;
- in Karaganda region – 10416 units;
- in Kostanay region – 6112 units;
- in Kyzylorda region – 8286 units;
- in Mangystau region – 2394 units;
- in Pavlodar region – 3380 units;
- in North Kazakhstan region – 4517 units;
- in Turkestan region – 71102 units;
- in East Kazakhstan region – 16133 units;
- in the capital of the Republic of Kazakhstan (Nur-Sultan) – 186 units;
- in the city of Almaty – 624 units;
- in the city of Shymkent – 3167 units.

As a result, we may come to conclusion that there are significant number of small players in the agricultural market of the Republic of Kazakhstan. Therefore, stakeholders in the agricultural sector of Kazakhstan could be separated into two distinct groups: internal and external. The internal shareholders in the agricultural market of the Republic of Kazakhstan include employees, the higher management stuff (if the enterprise is big enough to have the separation between management and employees) and shareholders (not always present due to the small size of the agricultural entity). The external stakeholders could include the following groups: suppliers, rival ventures, customers, regulators, local communities, creditors and governments.

It is worth noting that each group of stakeholders may have their own set of interests:

- shareholders are interested in increasing their own profits;
- employees are keen to be paid higher wages or improve own working conditions;
- the higher management team would like to ensure that the strategic corporate goals would be met;
- suppliers would be interested in better contract deals;
- customers would like to have better product quality for lower price;
- rival enterprises would always try to outperform each other;
- local communities would like to create the sustainable environment for its population for the socioeconomic development and the corporate growth;

- regulators would like to ensure that the agricultural sector of the economy would be properly regulated through different set of socioeconomic or political measures;
- the government of the Republic of Kazakhstan is interested in protecting internal security and peace through ensuring food safety and making sure that people are abiding rules and regulations;
- creditors are interested in being paid on time and fully.

The analysis of the stakeholder interests may help us to define four distinct groups of power interest framework:

1. High influence – high interest: shareholders and employees.
2. High influence – low interest: the government of the Republic of Kazakhstan, regulators (Ministry of Agriculture of the Republic of Kazakhstan, National Bank of Kazakhstan), creditors (usually second-tier banks in Kazakhstan).
3. Low influence – high interest: suppliers and rivals.
4. Low influence – low interest: customers and the local communities.

It is worth noting that employees (high number of small players including many self-employed farmers) and shareholders (the significant portion of modern farming practices require complex machinery and capital investment).

External analysis

The research methodology is based on the idea of moving from the macro-level analysis towards the micro-level. Therefore, the potential model for developing the agricultural industry in the Republic of Kazakhstan would consist of analysing the external macroenvironment before the internal market analysis.

The initial state of the macroenvironmental analysis would be defining the main trends that could impact the agricultural market from the following 8 significant aspects:

1. The political aspect. Joe Biden, known for his anti-Russian stands, won 2020 presidential elections in the USA [12]. Therefore, there is the potential that the USA could impose tighter trade and other types of economic sanctions with Russia. Moreover, the United States could force its partners to adopt economic sanctions against the Russian Federation. Therefore, trade negotiations with Russia for the post-Trump period could impact how Kazakhstani agricultural enterprises would run in the future. There is the significant potential for the agricultural sector of the Republic of Kazakhstan to expand into the Russian market if the USA starts the trade war against the Russian Federation.
2. The economic aspect. The coronavirus pandemic is expected to have its negative impact on the global economy. Moreover, the consequences of the COVID-19 epidemy could trigger the recession [13].
3. The social aspect. The population of the Republic of Kazakhstan is expected to grow even without any migration. For instance, according to the United Nations (2020) 24024045 residents could be expected to live in Kazakhstan without any immigration to Kazakhstan, and 25948363 people would live in the Republic of Kazakhstan if the fertility index would stay constant [14].
4. The labour force. The process of the labour migration was negatively impacted by the coronavirus epidemy due to the introduction of the travel restrictions on the global scales. Moreover, the expected negative economic impact of the COVID-19 could decrease the demand for the labour force in the short-term.
5. The technologic aspect. In the last century, electrification and the emergence of powerful engines allowed the spread of mechanization in agriculture. In this century, the next technological breakthrough in the agricultural sector of the Republic of Kazakhstan could be based on the complete automation of the production. For instance, there are already automated

robots for harvesting strawberries. The next stage of the agricultural development could be the creation of harvesting robots that would automatically determine and switch the harvesting program for different types of agricultural crops. The development of the agricultural productivity in Kazakhstan is impossible without reducing energy consumption and resource inputs through the introduction of robots. Moreover, the rise of the digital economy increased the significance of the big data analysis. For instance, the collection and the analysis of the big data could allow to treat the location of weeds through spraying only the required dose of pesticides. It is worth noting that the precision farming requires regardless of the size of the agricultural enterprise (from small farmers to agricultural cooperatives and conglomerates) knowledge in what places, volumes, when and what types of the resource investments are needed. In order to achieve these goals it could be necessary to collect the huge amount of data from different sources and from different parts of agricultural lands about various factors such as soil nutrition, the presence of weeds and pests, the state of maturity of crops, resource costs, and weather forecast. On the other hand, it would also be possible to use the laser technology for the weed control, which could be beneficial for organic farming (which tries to minimize the use of harmful chemical fertilizers). Small sensors and cameras could alert farmers when different types of crop threats could arise. For instance, a farmer could be notified about large number of pests. It is also possible necessary to build in an algorithmic model of processes in order to understand the possibility of automated methods for the rational use of remote sensing materials.

6. The aspect of competition. The most significant vital trend in the global agricultural market is the threat of new strong entrants due to adoption of the technologic innovations. For instance, the rise of the social media, the smartphone market and the internet of the things could significantly impact the economic competition in the global scales. For instance, the food product manufacturers in Europe and the USA nowadays are trying hard to maintain positive public image in the social media. Therefore, Kazakhstani agricultural enterprises should start adopting policies that could fully exploit the potentials of the internet of the things and the social media. It is also worth noting that global agricultural corporations could gain competitive advantage in the internal Kazakhstani market of the data mining and analysis would not be adopted by the majority of domestic agricultural producers.

7. The customer aspect. The disposable income of Kazakhstani citizens decreased due to the global COVID-19 epidemy. Therefore, the agricultural market could require the government intervention to stimulate the consumer demand.

8. The supplier aspect. The coronavirus pandemic made the location aspect of the production chain significant. The potential of introducing the global lockdown due to another pandemic threat could significantly disrupt the agricultural production chains. Therefore, in order to provide the food safety of the Republic of Kazakhstan there is the need to reduce the technologic dependence of the agricultural sector from the global economy.

Internal market analysis

The internal market analysis is focused on the comparative analysis of the agricultural sector of the Republic of Kazakhstan through applying Porter’s five forces framework:

1. New entrant threat is medium because any Kazakhstani resident could buy or rent agricultural plot of land for farming purposes. However, huge investments could be needed in order to compete with the transnational enterprises. Moreover, the government of the Republic of Kazakhstan tries to stimulate farmers through different programmes.

2. The supplier power is low but could grow if the negative economic consequences of the coronavirus epidemy would not be dealt soon (because due to the global lockdown the potential of outsourcing could be severely limited across country borders).

3. The power of buyers in the agricultural sector of the Republic of Kazakhstan is currently at the medium level (because a single buyer by himself/herself has no power over the market).
4. The substitute threat is high because the advanced farming techniques are not widespread in the Republic of Kazakhstan. Therefore, Kazakhstani agricultural enterprises are at the competitive disadvantage against the transnational corporations.
5. The rivalry is high because there are many competitors which provide similar products.
There are several agricultural industry driving forces that are worth mentioning:
1. The birth of the internet and the social media made sharing information about agricultural techniques easier, e.g. farmers nowadays are able to share ideas, thoughts and new knowledge with each other online without taking into consideration how far are they located (from each other). Moreover, the distance learning is becoming a cheaper alternative for training and retraining farmers about advanced and precise agricultural techniques.
2. Innovation, automatization and operating with the big data are becoming one of the major sources of the competitive advantage.
3. The remote sensing advancement are shifting perceptions of the ordinary farmers about collecting data and decision making.
In conclusion, the analysis of the driving forces could help us to determine the following success factors for the agricultural sector of the Republic of Kazakhstan:
1. Offering as low prices as possible through the combination of operation outsourcing, technologic advancements and independent data operating centres.
2. Utilizing the full potential of innovations in automatization and remote sensing in the agricultural sector.
3. Creating the consumer trust in Kazakhstani agricultural brand quality.

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