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A.A. Mutaliyeva[1*], A.Ye. Yesbolova[2], V.N. Seitova[3], A.N. Issakhmetova[4], Zh.S. Kazanbayeva[5]

[1,2,3]M. Auezov South Kazakhstan University, Shymkent, Kazakhstan;
[4,5]Central Asian Innovation University, Shymkent, Kazakhstan
[1]alua012@mail.ru, [2]yesbolova@gmail.com, [3]vilena_11@mail.ru, [4]i_a_n@inbox.ru, [5]zhanarkaz74@mail.ru

[1]https://orcid.org/0000-0002-4268-9382, [2]https://orcid.org/0000-0001-9503-9482,
[3]https://orcid.org/0000-0002-4404-4916

Development of innovative and cooperative complex in the dairy industry

Abstract:

Object: The article analyzes the current state and development dynamics of the dairy industry in Kazakhstan. The volume of milk produced by agricultural categories and their structural share in the total milk production of the country was studied and it was found that the share of the population in recent years is 72-75%.

The development of the dairy industry of the country is based on the creation of complexes of innovation and cooperation between the population and farms. The scheme of creation of innovative and cooperative relations between private farms and dairy processing company "FoodMaster-Shymkent" is developed and offered.

In the scheme of milk collection, deep processing of milk on the basis of innovative and cooperative relations of the company, it is proposed to include the following groups as participants in cooperative relations between farms: milk producers – individual households of the population, peasant (farmer) farms and private entrepreneurs; milk processor – milk processing innovation and cooperative complex; consumers of dairy products – the population and special trade organizations.

Methods: To achieve the research goal, general scientific methods were widely used, in particular, the method of content analysis; the method of analysis; the method of generalization; the method of graphical interpretation.

Findings: Dairy company "FoodMaster" is one of the innovative enterprises, which includes 4 types of innovations for the development of innovation and cooperation, which includes product innovation and process innovation, marketing innovation and organizational innovation.

This is an innovative dairy company, which for the first time introduced the ISO-9000 international standard in Kazakhstan, which effectively manages production according to the international standard, for the first time produced many types of high-quality innovative dairy products.

Conclusions: It is noted that the existing innovative technologies, qualitative structural change of categories in the dairy industry, intensive economic growth, increasing the competitiveness of dairy products, as well as the development of a program in the organization to increase production volumes, milk processing in accordance with international standards, as well as the issuance of recommendations to consumers to expand the range of milk are being studied.

Keywords:dairy industry, innovation, cooperation, innovation-cooperation, organizational innovation, innovative and cooperative complex, dairy products, dairy processing, innovative products, marketing innovation.

Introduction

As a result of the post-independence transformation of the agricultural sector in Kazakhstan, structural changes in the categories of dairy farming have significantly changed the production nature and capabilities of individual farms and farmers in the country. There the role of households and farms has increased in maintaining food security and improving the living standards of the population in rural areas.

In the current market conditions, the formation and development of large integrated production complexes of individual households and farms on the basis of large cooperation and integration agreements is an important priority in the system of organizational and economic measures to increase the production efficiency and competitiveness of individual households (Aidarova, A. *et al.*, 2016).

Consolidation of individual peasant farmers into a large cooperative-integrated structure is to ensure the demand of the population for food, and the income of workers and peasants in cooperative farms, the rapid economic growth of farms (Cole, J. B. *et al.*, 2020). Thus, this connection is made in different ways. On the one hand, as a process arising from the development of the division of labor in order to efficiently organize the production, processing and sale of products. On the other hand, to respond to the effective use of existing

* Corresponding author. E-mail address: *alua012@mail.ru*

equipment and technologies in modern market conditions on the basis of quality cooperation and integration agreements is to establish a cooperative relationship.

Literature Review

The State program of industrial and innovative development of the Republic of Kazakhstan for 2020-2025 says that every year there is a growing need to develop the cooperative complex of the dairy industry of the country, but nevertheless accurate information is not given on how to increase and develop this complex. Against the background of the decline of certain economic indicators of Kazakhstan during the 2019-2020 pandemic, indicators of the volume of consumer demand in the dairy industry have increased. In order to realize and increase the satisfaction of the needs of the population, as well as increase these indicators, it is necessary to introduce an innovative cooperative complex in the dairy industry.

In Norway, regional innovation systems have served as a tool for the regional development of the innovation and cooperation complex of the dairy industry (Fiore, M., *et al.,* 2020). Based on the Norwegian study, it can be concluded that the dairy sector of any country is primarily focused on national specifics, but with the availability of local and regional resources and the rational use of innovations, it is possible to compensate for differences and reach the interregional level (Grau, A. *et al.,* 2015).

Until today, the issue of the development of innovations in the cooperative complex of the dairy industry has not been considered on the territory of the Republic of Kazakhstan, and for the country this is absolutely a turning point for the reorganization of the cooperative-organizational form into an innovative-cooperative one.

Methods

The OECD formed an expert group that conducted diagnostic work, that is, included interviews with relevant local residents and institutions also during a 3-day study visit in June 2019; and identified the strengths and weaknesses of the model by comparing with international best practices.

They also reviewed the existing literature on the evolution of cooperative movements and reports of the Federation of Trentino Cooperatives. The strengths and weaknesses of the model were identified using an interdisciplinary approach in accordance with the fields of knowledge, political, economic and organizational. Trentino's model was compared with international best practices.

In this regard, the expert group was asked to identify and evaluate the evolution of the cooperative movement in order to:

1. promote local development and benefits for members through legal and fiscal framework incentives;
2. solve the problems arising as a result of increased competition with traditional enterprises and the economic downturn;
3. discuss best practices and lessons learned by cooperatives to identify key elements and factors for successfully building the resilience capacity of cooperatives;
4. discuss best practices and lessons learned from other collaboration models to identify key elements and drivers for innovation;
5. identify and explore options for future directions and activities in areas where the benefits of collaboration can be used to ensure sustainable opportunities.

Results

Based on the analysis of the dynamics of milk production in Kazakhstan, we see that in 2019 the volume of milk increased from 5864.9 thousand tons to 13.1% compared to 2015. The analysis of the structure of total milk production by dairy categories in 2019 revealed that the share of households was 72.7%, individual entrepreneurs and farms – 20.2%, and large agricultural enterprises produced only 7.1% of total milk (Uskenov *et al.,* 2021).

As private households, individual entrepreneurs, private family production, they are basically production based on the individual labor of family members and, in most cases, individual family funds (Galaso, P., *et al.,* 2022). For them, this is the main source of consumption of self-preservation, a compulsory measure to preserve the private economy. However, the development of individual households (production of dairy products, storage, processing, packaging and sale of dairy products) is not possible for every individual and individual entrepreneurs. Therefore, (Grigoryevich, S. V. *et al.,* 2021) the successful and rapid growth of their own production depends on the establishment and support of industrial relations with large, specialized milk production (Table).

Table. Dynamics of the volume and structure of milk production in the categories of dairy farming in Kazakhstan

Indicators	2015	2016	2017	2018	2019		2019 2015 %
					thousand tons	%	
Number of cows in Kazakhstan, thousand heads	3130.5	3209.9	3358.0	3362.4	3576.5	x	114.2
Volume of milk produced in Kazakhstan, thousand tons	5182.4	5341.5	5503.4	5686.2	5864.9	100	113.1
including thousands of tons:							
in agricultural enterprises	265.8	319.9	361.4	384.6	414.4	7.1	155.9
individual entrepreneur, on farms	790.7	900.0	1038.1	1120.4	1182.2	20.2	149.5
in private households	4125.9	4121.8	4103.9	4181.3	4268.3	72.7	103.4
Note - compiled by the author on the basis of the dynamics of milk production in Kazakhstan							

In market conditions, dairy enterprises and private farms need not only self-preservation, but also the need to create an innovative and cooperative complex for deep processing of coarse milk, created on the basis of inter-farm cooperation and integration (Alimardanova *et al.,* 2021), for the formation and development of competitive, successful milk production and considers it as the main goal of rapid development of production. This is important not only for individual farms and peasant (farmer) farms, but also for long-term organizations and consumers, milk buyers and dairy processing facilities in the industry (Holloway, G. *et al.,* 2020).

Private households and farms, firstly, determine what they need to produce, in what volume and where to sell and secondly, tax and other benefits for individual households, as well as innovative and cooperative complexes associated with the expansion of private farms depending on the size of land and livestock the amount of subsidized support and assistance from the government (Kyrylov *et al.,* 2021), etc. should be considered. Only then, the structure of inter-farm cooperation on the basis of cooperative relations within the country will ensure the rapid development of not only individual farms, but also the economy of the industry.

Formation and development of innovative and cooperative dairy processing complex between private households and farms on the basis of contracts will allow them to effectively use part of their resources to individual households, which will increase their role, increase the overall food potential of the country, improve the welfare of the population and creates conditions for increasing the efficiency of dairy production as a whole.

Discussions

Today, cooperation and integration ties between farms and private households and the innovative dairy processing company “FoodMaster” play an important role in the development of the dairy industry in the country. The introduction of complex mechanization, introduction of advanced automated technology, expansion of production and increase of labor productivity, reduction of production costs will be created in specialized dairy enterprises (Gavrilova, 2014). Significant increase in milk marketability through specialization of dairy livestock on the basis of innovative approach is a strategic development plan for the company.

The main task of the food processing company “FoodMaster-Shymkent” is the sustainable development of milk production and the continuous provision of consumers with innovative products made from natural ingredients in accordance with international quality standards.

Dairy company “FoodMaster-Shymkent” includes existing production, process, production, marketing innovations. This company is one of the enterprises in the agricultural sector, which includes 4 types of innovations in terms of economic activities: product innovations and process innovations, marketing innovations and organizational innovations.

LLP “FoodMaster-Shymkent” carried out the following product innovations in order to operate on the basis of waste-free technology: milk collection services from the population on a cooperative basis, milk and dairy products, condensed milk products, sour cream, kefir, Dolce yogurt, butter, “Dutch”, “Lenger”, “Castrom”, “Chechel” cheeses, “home” cottage cheese, etc. products, ice cream assortment products, storage of dairy products in the store, implementation of product (service) innovations.

According to the introduction of marketing innovations (sales in the market), they are: creation of a milk market for the population, pricing, purchase, sale of packaged milk, packaged condensed milk, yogurts,

packaged butter, packaged frozen cheeses, cheese, cottage cheese, ice cream; new marketing strategies for sales, wholesale, direct sales pricing were used in the company's stores (Chagwiza, 2016).

In addition, there is a sales branch and two private dairy farms, established on the basis of marketing innovations. “FoodMaster-Shymkent” is a leader in the production of dairy products in the market of Kazakhstan, and is also the first company in the country to launch many new types of innovative dairy products. As the first company in Kazakhstan to implement the international standard ISO-9000, the company is the only guarantee of effective management, production of quality products in accordance with international standards.

In the field of dairy farming, the following groups of participants of inter-farm cooperation in the scheme of milk collection, deep milk processing on the basis of innovative and cooperative relations of the company “FoodMaster” from individuals and farms (farmers):

- dairy producers – individual households, peasant (farmer) farms, individual entrepreneurs;
- milk processor – innovative and cooperative milk processing complex;
- consumers of dairy products – the population and specialized trade organizations (Fig. 1).

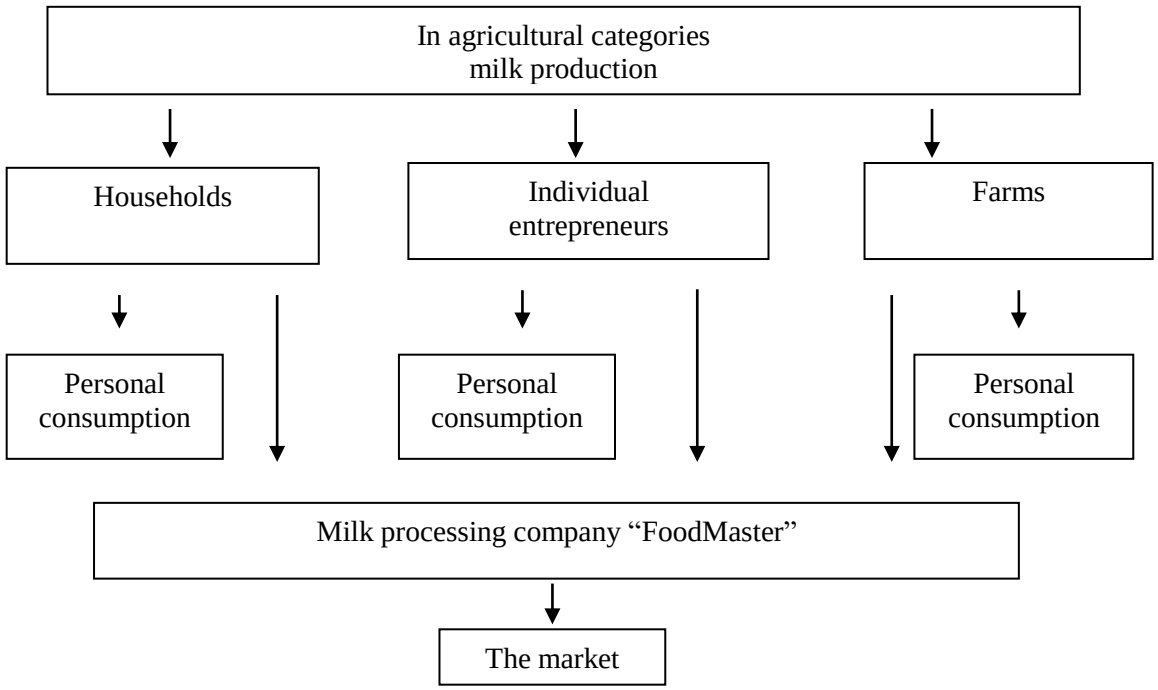

Figure. Scheme of the food processing company “FoodMaster”, which established an innovative and cooperative relation between the categories of dairy farms

Note - compiled by the author on the basis of innovative and cooperative relations of the company “FoodMaster”

Amendments to the current legislation on the activities of personal subsidiary farms of the population provide for determining the status of personal subsidiary farms of the population, ensuring the rational use of land in rural settlements, access to measures of state support for personal subsidiary farms of the population (Semenov *et al.*, 2021), as well as ensuring the formation of plans and programs for the development of personal subsidiary farms in districts and regions of the country.

Conclusions

The formation and development of the market of milk and dairy products depends on the condition, importance and maturity of the infrastructure, which must be regulated by the state. It should be noted that in the context of low solvency of the population, imported foreign dairy products create significant competition for domestic products (Junaydullaevich, A. A. *et al.*, 2021). Therefore, the competitiveness of Kazakhstan's dairy products can be increased by producing products that are adapted to world standards and meet the requirements of foreign markets (Manual, O., 2005).

This innovative investment program will allow “FoodMaster” to increase production of dairy products, process dairy products in the country in accordance with advanced international standards, as well as expand the range of dairy products for consumers and their range.

In conclusion, the importance of cooperation and integration between private farms and the innovative dairy processing company "FoodMaster" in the development of dairy farming in the country. It was determined that this innovative milk processing company is the first non-waste deep milk processing company established in Kazakhstan, which has an innovative high-tech milk processing company based on cooperation between individuals and farms, which meets the general quality requirements (Todde, G. *et al.*, 2018).

It is proposed to introduce and create in all regions of Kazakhstan the production experience of the innovative dairy processing company "FoodMaster-Shymkent" in the deep processing of integrated milk on the basis of cooperation between farms and private households.

Introduction of innovative services in milk processing in milk production, implementation of processes of innovation and cooperation between farms: creation of innovative and cooperative complexes for milk production, milk collection, packaging and sale, further development of the country's dairy industry, food security, helps to meet consumer demand for dairy products (Yesbolova, A. Y. *et al.*, 2016). Existing innovations will allow qualitative structural changes in the dairy industry, rapid economic growth, increase the competitiveness of the dairy industry.

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А.А. Муталиева, А.Е. Есболова, В.Н. Сейтова, А.Н. Исахметова, Ж.С. Казанбаева

Сүт саласында инновациялық-кооперациялық кешенді дамыту

Аңдатпа:

Мақсаты: Мақалада Қазақстанның сүт саласының қазіргі жағдайы мен даму динамикасына талдау жүргізілген. Ауыл шаруашылығы санаттарында өндірілген сүттің көлемі және олардың елдің жалпы сүт өндірісіндегі құрылымдық үлес салмағы зерттелді және соңғы жылдары ауыл шаруашылығының үлесі 72-75% құрайтыны анықталды.

Еліміздің сүт өнеркәсібінің дамуы халық пен шаруа (фермер) қожалықтары арасындағы инновациялық және кооперативтік байланыстарға негізделген кешендер құруға негізделген. «ФудМастер-Шымкент» сүт өңдеу кәсіпорнының тұрғындардың жеке қожалықтары мен шаруа қожалықтары арасында инновациялық және кооперативтік байланыстарды құру схемасы әзірленіп, ұсынылды.

Компанияның инновациялық-кооперациялық байланыстары негізінде сүтті жинау, сүтті қайта өңдеу схемасында шаруашылықтар арасындағы кооперациялық байланыстарға қатысушылар ретінде мынадай топтарды қосу ұсынылды: сүт өндірушілер — халықтың жеке шаруашылықтары, шаруа (фермер) қожалықтары және жеке кәсіпкерлер; сүт өңдеуші — сүт өңдеуші инновациялық-кооперациялық кешен; сүт өнімдерін тұтынушылар — халық және арнайы сауда ұйымдар.

Әдісі: Зерттеу мақсатына жету үшін жалпы ғылыми әдістер кеңінен қолданылды, атап айтқанда мазмұнды талдау әдісі; талдау әдісі; жалпылау әдісі; графикалық интерпретация әдісі.

Қорытынды: Инновациялық-кооперациялық кешенді дамыту мақсатында «ФудМастер» сүт компаниясы инновацияның 4 түрін қамтыған инновациялық кәсіпорындар қатарына жатады, өнімдік инновациялар мен үрдістік инновациялар, маркетингтік инновациялар мен ұйымдық инновацияларды өз ішіне қамтығандығы зерттеліп, негізделген. Бұл Қазақстанда алғаш рет ИСО–9000 халықаралық стандартын енгізген, халықаралық стандарт бойынша өндірісті тиімді басқаратын, алғаш рет өндірісте сапалы инновациялық сүт өнімдерінің көптеген түрлерін шығаруды жүзеге асырған инновациялық сүт компаниясы.

Бұл инновациялық-кооперациялық кешенөндірістік инновациялық қызметтерді өндіріске ендірген, сүтті қалдықсыз қайта өңдейтін компания ретінде, халықтың азық-түлікке деген қауіпсіздігін сақтауға, халықтың сүт сұранысын қанағаттандыруға жағдай жасайды.

Тұжырымдама: Қолданыстағы инновациялық технологиялар, сүт шаруашылығындағы санаттардың сапалы құрылымдық өзгеруіне, қарқынды экономикалық өсуіне, сүт өндірісінің бәсекеге қабілеттілігін арттыруға, сонымен бірге, ұйымдағы әзірленген бағдарлама өнім көлемін арттыруға, сүтті халықаралық стандарттарға сай өңдеуге, сондай-ақ, тұтынушыларға сүт ассортиментін кеңейтіп жатқаны зерделеніп, ұсыныстар беріліп жатқаны айтылады.

Кілт сөздер: сүт саласы, инновация, кооперация, инновациялық-кооперация, ұйымдық инновация, инновациялық-кооперациялық кешен, сүт өнімдері, сүт өңдеу, инновациялық өнімдер, маркетингтік инновация.

А.А. Муталиева, А.Е. Есболова, В.Н. Сейтова, А.Н. Исахметова, Ж.С. Казанбаева

Развитие инновационно-кооперационного комплекса в молочной отрасли

Аннотация:

Цель: В статье проведен анализ современного состояния и динамики развития молочной отрасли Казахстана. Исследованы объемы произведенного молока сельскохозяйственными категориями и их структурный удельный вес в общем молочном производстве страны и установлено, что доля сельского хозяйства в последние годы составляет 72–75 %.

В развитии молочной отрасли страны базируется создание комплексов на основе инновационно-кооперационных связей между населением и крестьянскими (фермерскими) хозяйствами. Разработана и предложена схема создания инновационно-кооперационных связей между отдельными хозяйствами населения и крестьянскими хозяйствами молокоперерабатывающей компании «ФудМастер–Шымкент».

В схеме сбора молока, глубокой переработки молока на основе инновационно-кооперационных связей компании в качестве участников кооперационных связей между хозяйствами предложено включить следующие группы: производители молока — индивидуальные хозяйства населения, крестьянские (фермерские) хозяйства и индивидуальные предприниматели; переработчик молока — молокоперерабатывающий инновационно-кооперационный комплекс; потребители молочной продукции — население и специальные торговые организации.

Методы: Для достижения цели исследования широко использовались общенаучные методы, в частности, метод контент-анализа, метод анализа, метод обобщения, метод графической интерпретации.

Результаты: В целях развития инновационно-кооперационного комплекса Молочная компания «ФудМастер» относится к числу инновационных предприятий, включающих 4 вида инноваций, исследовано и

обосновано, что она включает в себя продуктовые инновации и трендовые инновации, маркетинговые инновации и организационные инновации. Это инновационная молочная компания, впервые внедрившая международный стандарт ИСО–9000 в Казахстане, которая эффективно управляет производством по международному стандарту, впервые осуществила выпуск на производстве многих видов качественной инновационной молочной продукции.

Этот инновационно-кооперационный комплекс, как компания по глубокой безотходной переработке молока, внедрившая в производство производственные инновационные услуги, создает условия для обеспечения продовольственной безопасности населения, удовлетворения потребностей населения в молоке.

Выводы: Отмечается, что изучаются существующие инновационные технологии, качественное структурное изменение категорий в молочной промышленности, интенсивный экономический рост, повышение конкурентоспособности молочной продукции, а также разработка в организации программы по увеличению объемов производства, переработке молока в соответствии с международными стандартами, а также выдача рекомендаций потребителям по расширению ассортимента молока.

Ключевые слова: молочная промышленность, инновации, кооперация, инновации-кооперация, организационные инновации, инновационно-кооперативный комплекс, молочные продукты, переработка молока, инновационные продукты, маркетинговые инновации.