

ISSN 2518-1483 (Online),
ISSN 2224-5227 (Print)

2019 • 1

ҚАЗАҚСТАН РЕСПУБЛИКАСЫ
ҰЛТТЫҚ ҒЫЛЫМ АКАДЕМИЯСЫНЫҢ

БАЯНДАМАЛАРЫ

ДОКЛАДЫ

НАЦИОНАЛЬНОЙ АКАДЕМИИ НАУК
РЕСПУБЛИКИ КАЗАХСТАН

REPORTS

OF THE NATIONAL ACADEMY OF SCIENCES
OF THE REPUBLIC OF KAZAKHSTAN

PUBLISHED SINCE 1944



ALMATY, NAS RK

Бас редакторы
х.ғ.д., проф., ҚР ҰҒА академигі **М.Ж. Жұрынов**

Редакция алқасы:

Адекенов С.М. проф., академик (Қазақстан) (бас ред. орынбасары)
Величкин В.И. проф., корр.-мүшесі (Ресей)
Вольдемар Вуйцик проф. (Польша)
Гончарук В.В. проф., академик (Украина)
Гордиенко А.И. проф., академик (Белорус)
Дука Г. проф., академик (Молдова)
Илолов М.И. проф., академик (Тәжікстан),
Леска Богуслава проф. (Польша),
Локшин В.Н. проф. чл.-корр. (Қазақстан)
Нараев В.Н. проф. (Ресей)
Неклюдов И.М. проф., академик (Украина)
Нур Изура Удзир проф. (Малайзия)
Перни Стефано проф. (Ұлыбритания)
Потапов В.А. проф. (Украина)
Прокопович Полина проф. (Ұлыбритания)
Омбаев А.М. проф., корр.-мүшесі (Қазақстан)
Өтелбаев М.О. проф., академик (Қазақстан)
Садыбеков М.А. проф., корр.-мүшесі (Қазақстан)
Сатаев М.И. проф., корр.-мүшесі (Қазақстан)
Северский И.В. проф., академик (Қазақстан)
Сикорски Марек проф., (Польша)
Рамазанов Т.С. проф., академик (Қазақстан)
Такибаев Н.Ж. проф., академик (Қазақстан), бас ред. орынбасары
Харин С.Н. проф., академик (Қазақстан)
Чечин Л.М. проф., корр.-мүшесі (Қазақстан)
Харун Парлар проф. (Германия)
Энджун Гао проф. (Қытай)
Эркебаев А.Э. проф., академик (Қырғыстан)

«Қазақстан Республикасы Ұлттық ғылым академиясының баяндамалары»

ISSN 2518-1483 (Online),

ISSN 2224-5227 (Print)

Меншіктенуші: «Қазақстан Республикасының Ұлттық ғылым академиясы» Республикалық қоғамдық бірлестігі (Алматы қ.)
Қазақстан республикасының Мәдениет пен ақпарат министрлігінің Ақпарат және мұрағат комитетінде 01.06.2006 ж.
берілген №5540-Ж мерзімдік басылым тіркеуіне қойылу туралы куәлік

Мерзімділігі: жылына 6 рет.

Тиражы: 500 дана.

Редакцияның мекенжайы: 050010, Алматы қ., Шевченко көш., 28, 219 бөл., 220, тел.: 272-13-19, 272-13-18,
<http://reports-science.kz/index.php/en/archive>

© Қазақстан Республикасының Ұлттық ғылым академиясы, 2019

Типографияның мекенжайы: «Аруна» ЖК, Алматы қ., Муратбаева көш., 75.

Главный редактор
д.х.н., проф., академик НАН РК **М. Ж. Журинов**

Редакционная коллегия:

Адекенов С.М. проф., академик (Казахстан) (зам. гл. ред.)
Величкин В.И. проф., чл.-корр. (Россия)
Вольдемар Вуйцик проф. (Польша)
Гончарук В.В. проф., академик (Украина)
Гордиенко А.И. проф., академик (Беларусь)
Дука Г. проф., академик (Молдова)
Илолов М.И. проф., академик (Таджикистан),
Леска Богуслава проф. (Польша),
Локшин В.Н. проф. чл.-корр. (Казахстан)
Нараев В.Н. проф. (Россия)
Неклюдов И.М. проф., академик (Украина)
Нур Изура Удзир проф. (Малайзия)
Перни Стефано проф. (Великобритания)
Потапов В.А. проф. (Украина)
Прокопович Полина проф. (Великобритания)
Омбаев А.М. проф., чл.-корр. (Казахстан)
Отелбаев М.О. проф., академик (Казахстан)
Садыбеков М.А. проф., чл.-корр. (Казахстан)
Сатаев М.И. проф., чл.-корр. (Казахстан)
Северский И.В. проф., академик (Казахстан)
Сикорски Марек проф., (Польша)
Рамазанов Т.С. проф., академик (Казахстан)
Такибаев Н.Ж. проф., академик (Казахстан), зам. гл. ред.
Харин С.Н. проф., академик (Казахстан)
Чечин Л.М. проф., чл.-корр. (Казахстан)
Харун Парлар проф. (Германия)
Энджун Гао проф. (Китай)
Эркебаев А.Э. проф., академик (Кыргызстан)

Доклады Национальной академии наук Республики Казахстан»

ISSN 2518-1483 (Online),

ISSN 2224-5227 (Print)

Собственник: Республиканское общественное объединение «Национальная академия наук Республики Казахстан» (г. Алматы)

Свидетельство о постановке на учет периодического печатного издания в Комитете информации и архивов Министерства культуры и информации Республики Казахстан №5540-Ж, выданное 01.06.2006 г.

Периодичность: 6 раз в год.

Тираж: 500 экземпляров

Адрес редакции: 050010, г.Алматы, ул.Шевченко, 28, ком.218-220, тел. 272-13-19, 272-13-18

<http://reports-science.kz/index.php/en/archive>

©Национальная академия наук Республики Казахстан, 2019 г.

Адрес типографии: ИП «Аруна», г.Алматы, ул.Муратбаева, 75

E d i t o r i n c h i e fdoctor of chemistry, professor, academician of NAS RK **M.Zh. Zhurinov****E d i t o r i a l b o a r d:****Adekenov S.M.** prof., academician (Kazakhstan) (deputy editor in chief)**Velichkin V.I.** prof., corr. member (Russia)**Voitsik Valdemar** prof. (Poland)**Goncharuk V.V.** prof., academician (Ukraine)**Gordiyenko A.I.** prof., academician (Belarus)**Duka G.** prof., academician (Moldova)**Iolov M.I.** prof., academician (Tadjikistan),**Leska Boguslava** prof. (Poland),**Lokshin V.N.** prof., corr. member. (Kazakhstan)**Narayev V.N.** prof. (Russia)**Nekludov I.M.** prof., academician (Ukraine)**Nur Izura Udzir** prof. (Malaysia)**Perni Stephano** prof. (Great Britain)**Potapov V.A.** prof. (Ukraine)**Prokopovich Polina** prof. (Great Britain)**Ombayev A.M.** prof., corr. member. (Kazakhstan)**Otelbayv M.O.** prof., academician (Kazakhstan)**Sadybekov M.A.** prof., corr. member. (Kazakhstan)**Satayev M.I.** prof., corr. member. (Kazakhstan)**Severskiy I.V.** prof., academician (Kazakhstan)**Sikorski Marek** prof., (Poland)**Ramazanov T.S.** prof., academician (Kazakhstan)**Takibayev N.Zh.** prof., academician (Kazakhstan), deputy editor in chief**Kharin S.N.** prof., academician (Kazakhstan)**Chechin L.M.** prof., corr. member. (Kazakhstan)**Kharun Parlar** prof. (Germany)**Endzhun Gao** prof. (China)**Erkebayev A.Ye.** prof., academician (Kyrgyzstan)**Reports of the National Academy of Sciences of the Republic of Kazakhstan.****ISSN 2224-5227****ISSN 2518-1483 (Online),****ISSN 2224-5227 (Print)**

Owner: RPA "National Academy of Sciences of the Republic of Kazakhstan" (Almaty)

The certificate of registration of a periodic printed publication in the Committee of Information and Archives of the Ministry of Culture and Information of the Republic of Kazakhstan N 5540-Ж, issued 01.06.2006

Periodicity: 6 times a year

Circulation: 500 copies

Editorial address: 28, Shevchenko str., of 219-220, Almaty, 050010, tel. 272-13-19, 272-13-18,

<http://reports-science.kz/index.php/en/archive>

© National Academy of Sciences of the Republic of Kazakhstan, 2019

Address of printing house: ST "Aruna", 75, Muratbayev str, Almaty

**REPORTS OF THE NATIONAL ACADEMY OF SCIENCES
OF THE REPUBLIC OF KAZAKHSTAN**

ISSN 2224-5227

<https://doi.org/10.32014/2019.2518-1483.23>

Volume 1, Number 323 (2019), 143 – 147

UDC 338.43.01

D.A. Tleuzhanova¹, D.S. Kurmanova², A.A. Beisembaeva³, M.N. Nurgabylov⁴^{1,2,3}Kazakh Agrotechnical University. S.Seifullin;⁴Taraz Innovation and Humanitarian Universitytda_06@mail.ru, dana14.86@mail.ru, a_s_em_o_k@mail.ru**PROBLEMS AND PROSPECTS OF SUSTAINABLE
DEVELOPMENT OF AGRICULTURE**

Abstract. Rural territories of Kazakhstan are the most important socio-economic and ecological subsystem of society. They have specific features, their own goals, objectives, principles, criteria and development indicators. Here are concentrated significant human, natural and industrial resources, industries, the effective development of which can significantly improve the state of the economy and raise the standard of living of the population of the state. The authors believe that the unfavorable demographic situation in the Republic of Kazakhstan, as a result of which the decline in the rural population is progressing. In accordance with this, in the context of the issue being studied, first of all it is advisable to consider the indicators characterizing the standard of living of the population in rural areas of the Akmola region of Kazakhstan. Currently, the development of rural areas of Kazakhstan attracts the attention of a wide range of specialists who are trying to build the conceptual foundations of this process.

Keywords: agriculture, sustainable development, prospects, resources, standard of living, improvement of life.

INTRODUCTION

Improving rural life and developing the rural economy is one of the priorities of the state social and economic policy. Ensuring sustainable development of rural areas in modern conditions involves the expansion of sources of employment, an increase in incomes of the rural population, the creation of normal living conditions.

The Head of State's article "Looking to the future: modernization of public consciousness", proposed by the president's Tugan Jer program and the project "Religious shrines of Kazakhstan" - "Sacred Geography of Kazakhstan" introduced a new impetus to the development and strengthening of rural areas well-being of any state, primarily due to the fact that a sustainable level of development of rural areas is the key to food independence of the state. No exception is Kazakhstan. In addition, rural territories occupy 76.30% of the total territory of Kazakhstan, which means that the majority of the population lives in these territories and therefore needs to be provided with a corresponding number of jobs. Consequently, the above factors show the full significance of strengthening and maximizing the economic potential of rural areas of the state.

MAIN PART

In the strategy of the President of Kazakhstan N.A.Nazarbayev "Kazakhstan-2030" and in the Concept of development of the tourism industry of the Republic of Kazakhstan until 2023, tourism and tourism infrastructure are considered as a priority for the development of the country's tourism potential and promoting the image of the state abroad. Without effective use of tourist and recreational and other potentials of various regions of Kazakhstan, it is impossible to turn tourism into a profitable sector of the economy. To implement tourism projects, special attention must be paid to the availability of natural tourist resources [1,2]. Also in his Message to the people of Kazakhstan on January 10, 2018, the President of the Republic of Kazakhstan N.Nazarbayev noted that the Kazakhstani should be the ideal of our society, who knows his own history, language, culture, while having a modern knowledge of foreign languages, having advanced and global views [3].

At the same time, the significant differentiation of incomes in urban and rural areas remains an alarming sign. In 2012, the poverty level in rural areas exceeded the urban level by more than 3.7 times, and in 2007 the difference was only 2.6 times. This suggests that the gap between the quality indicators of life for urban residents and those of the rural population has increased, despite the measures taken by the state.

It is important to note that about 45.5% of the population lives in the Kazakh village today, so the fight against poverty here can significantly improve the indicators of the republic on the quality of life. The rapid jump of Kazakhstan up from 72nd to 51st place in the annual competitiveness ranking of world economies is logical and predictable.

Thus, the current state of economic development of rural regions of Kazakhstan, as a categorical complex of land areas of the country as a whole, puts on the agenda the question of finding new forms of management. At the same time, it is rural green tourism that serves as a promising direction for the development of tourism services, which is based on active recreation in rural areas.

The economic condition of a region is determined by a set of indicators characterizing the socio-economic state of life in the region, areas of commercial activity that provide tax revenues to the regional budget, the investment climate, etc.

Today, the Akmola region, is in fourth place from the end in accordance with the rating of income differentiation of the population of Kazakhstan. At the same time, nominal incomes grew less than the rate of consumer inflation in the period from January to March (15.1%), thereby reflecting a drop in the level of real incomes of the population.

In the first quarter of 2017, wages accounted for 78% of all income per capita, which is 2% less than the figure for the previous reporting period. At the same time, the share of social transfers during the reporting period, on the contrary, increased by 1.7%, to the level of 18.4%.

Let us analyze the level of the rural population of Akmola region living below the poverty line using the data presented in Table 4 of this paper.

Table 1 - Analysis of the population of rural areas of Akmola region living below the poverty line for 2017.

Indicator	Akmola region	Absol. deviation. (+; -)	Relation. deviation, %
The share of the population with incomes (used for consumption) is lower than the subsistence minimum - total	3,5	+0,6	20,7
Urban area	2,6	+1,4	116,67
Countryside	4,3	-0,6	-12

Thus, on the basis of the presented data, it should be noted that in the Akmola region the share of the rural population with low income is 3.5, which is lower by 0.6 compared to the average of 2.9 for the Republic of Kazakhstan. However, in spite of this, it makes up the highest indicators for the urban population of 2.6, which is higher than the given indicator (1.2) in the republic by 1.4, based on the analyzed data, we see that rural areas account for 4.3, which is lower than the national average by 0.6. This trend is a negative characteristic of the domestic policy of the government of Kazakhstan and indicates the need for urgent review and improvement. The situation is aggravated by the fact that most of the population of Akmola region is just the rural population, which indicates a general high relative poverty indicator in the region.

At present, rural areas have a high need for diversification of economic activity, renewal of the material and technical base of production, reinforcement of staff and a significant increase in the level of effectiveness of municipal administration.

The goal of investment activity at the district level is to develop and implement a system of priorities, create mechanisms and specific measures to ensure the formation of investment projects that ensure the development of the economy of agricultural areas in accordance with the long-term strategy. Within this framework, an important role is played by the formation of a scientific, technical and technological potential adequate to a dynamically developing market economy, meeting the sustainable development strategy, the resource capabilities of the territory, the requirements of its effectiveness for ensuring the competitiveness of the economy, spiritual development, and improving the quality of life of the rural population.

The functioning of agricultural enterprises in the conditions of the market aggravates competition, which leads to a reduction in employment of labor resources, and as a result, a decrease in income, level and quality of life, outflow of the working-age population from rural areas. To prevent mass unemployment will help the development of new types of business activities. One of the most important areas of economic development in rural areas of the Republic of Kazakhstan is a diversification strategy, which involves the addition of traditional industries with new industries.

In accordance with the goal it is necessary to solve the following tasks:

- to review the completed projects for the transformation of the area;
- consider the main methods of managing sustainable rural development;
- select a system to support management decision making and conduct a comprehensive analysis of the socio-economic potential;
- develop a system of balanced indicators of the level of socio-economic development of rural areas, which is used to assess the level of development of the economy and natural potential;
- to evaluate, simulate and determine trends of the selected system of indicators in the context of information uncertainty;
- develop a set of investment projects that create the basis for sustainable development of the territory, consisting of interconnected investment projects.

The theoretical and methodological basis for the study of this issue can serve as objective economic laws, concepts of economists who have studied the sustainable development of the territory. To implement investment activities in a specific territory, a comprehensive economic and mathematical model of the territory should be proposed, which determines the specifics of rural areas. A balanced scorecard should be defined, reflecting the economic and social situation of the territory, as well as its natural and resource potential, and special measuring scales designed to measure indicators, designed to be used in conditions of uncertainty, inaccuracy and incompleteness of information, as well as using both quantitative and quality ratings. It is also advisable to build dynamic models of the main indicators of territory development, assess the risks and potentials of a specific territory, evaluate the current state and formulate the main promising areas of development of the territory, develop a comprehensive investment model of territory development defining the main directions of socio-economic development and develop a complex business proposal.

Among the areas of innovation can also include:

- selection of promising and implementation on specific territories of domestic production technologies for the organization of effective agricultural activities;
- application of new energy-saving technologies and energy-generating systems, small energy facilities, renewable energy sources, focused on the specifics of agricultural activities; creation of an information and analytical base for managing the development of territories in the conditions of information uncertainty;
- proposals for pilot projects for rural development and a base of investment projects and development programs;
- specific pilot projects on the organization of eco-settlements in the territories, pilot projects for the creation of a system for managing regional and municipal development, pilot projects of historical, educational and sports-entertainment areas for family recreation;
- programs and systems of management training for rural development.

Currently, the development of rural areas attracts the attention of a wide range of specialists who are trying to build the conceptual foundations of this process. However, the practical results of the implementation of these theoretical constructs are obviously far away. And the point here is not so much and not only in the imperfection of theories, but also in the ungreediness of the territories themselves to accept them. This is due not only to financial difficulties, but above all to the lack or shortage of centers for the development of pilot projects for the development of territories, training sites in areas for the development of new production technologies, trained specialists in both production and management areas, business management technologies in modern market conditions. , forward planning programs. This is especially noticeable in areas where the outflow of able-bodied population to large cities is intensified. To improve the efficiency of agricultural production and management of territories, it is necessary to introduce a number of innovations that ensure the activation and implementation of investment activities.

First of all, it is necessary to assess the resource potential of a specific territory and determine the specific risks and potentials of the territory, as well as the actual tasks that need to be addressed for its harmonious development.

It is known that an important condition for the formation and development of rural areas is the availability of skilled labor resources - workers with knowledge and skills in the technological, environmental, agronomic and economic spheres. The unfavorable demographic situation, as a result of which the decline in the number of the rural population, including its able-bodied part, progresses inexorably, aggravates the situation with the labor force in the countryside.

CONCLUSION

Thus, since rural areas play an important role in the economy of the region, the region and the country as a whole, the sustainable development of rural areas is a priority of the state's social and economic policy. The growth of the level and quality of life of the rural population, the provision of enterprises in the agrarian sector and the social sphere with qualified personnel, and the preservation and development of folk culture depend on the effectiveness of this policy. While maintaining the current situation, attracting qualified specialists to the village, overcoming the depopulation of many rural territories and, therefore, maintaining sustainability in most of the country's rural territory is an unlikely and difficult task.

УДК 338.43.01

Д.А. Тлеужанова¹, Д.С. Курманова², А.А. Бейсембаева³, М.Н. Нургабылов⁴

^{1,2,3}С.Сейфуллин ат. Қазақ агротехникалық университеті;

⁴Тараз инновациялық гуманитарлық университеті

АУЫЛ ШАРУАШЫЛЫҒЫНЫҢ ТҰРАҚТЫ ДАМУЫНЫҢ МӘСЕЛЕЛЕРІ МЕН МІНДЕТТЕРІ

Аннотация. Қазақстанның ауылдық аумақтары қоғамның маңызды әлеуметтік-экономикалық және экологиялық кіші жүйесі болып табылады. Олардың ерекшеліктері, олардың мақсаттары, мақсаттары, принциптері, критерийлері және даму көрсеткіштері бар. Мұнда адамның, табиғи және өнеркәсіптік ресурстардың, өндірістің тиімді дамуы экономиканың жай-күйін едәуір жақсартуға және мемлекеттің тұрғындарының өмір сүру деңгейін арттыруға мүмкіндік беретін салаларда шоғырланған. Авторлар Қазақстан Республикасындағы қолайсыз демографиялық ахуалдың нашарлағанын, соның нәтижесінде ауыл халқының төмендеуі байқалады. Осыған сәйкес, мәселенің зерттелуіне байланысты, ең алдымен, Ақмола облысының ауылдық жерлеріндегі халықтың тұрмыс деңгейін сипаттайтын көрсеткіштерді қарастырған жөн. Қазіргі уақытта Қазақстанның ауылдық аумақтарын дамыту осы процестің тұжырымдамалық негіздерін құруға тырысатын кең ауқымды мамандардың назарын аударады.

Түйін сөздер: ауыл шаруашылығы, орнықты даму, перспективалар, ресурстар, өмір сүру деңгейі, өмірді жақсарту.

УДК 338.43.01

Д.А. Тлеужанова¹, Д.С. Курманова², А.А. Бейсембаева³, М.Н. Нургабылов⁴

^{1,2,3}Казахский агротехнический университет им. С.Сейфуллина;

⁴Таразский инновационно-гуманитарный университет

ПРОБЛЕМЫ И ПЕРСПЕКТИВЫ УСТОЙЧИВОГО РАЗВИТИЯ СЕЛЬСКОГО ХОЗЯЙСТВА

Аннотация. Сельские территории Казахстана являются важнейшей социально-экономической и экологической подсистемой общества. Они имеют специфические особенности, собственные цели, задачи, принципы, критерии и показатели развития. Здесь сосредоточены значительные людские, природные и производственные ресурсы, отрасли, эффективное развитие которых может существенно улучшить состояние экономики и поднять уровень жизни населения государства. Авторы считают, что неблагоприятная

демографическая ситуация в РК, вследствие чего прогрессирует сокращение численности сельского населения. В соответствии с этим в контексте исследуемого вопроса в первую очередь целесообразно рассмотреть показатели, характеризующие уровень жизни населения сельских территорий Акмолинской области Казахстана. В настоящее время развитие сельских территорий РК привлекает внимание широкого круга специалистов, пытающихся построить концептуальные основы этого процесса.

Ключевые слова: сельское хозяйство, устойчивое развитие, перспективы, ресурсы, уровень жизни, улучшение жизни.

Сведения об авторах:

Тлеужанова Данагуль Амангельдиновна - к.э.н., и.о. ассоциированный профессор кафедры Финансы, Казахский агротехнический университет им. С.Сейфуллина, ORCID [0000-0003-2302-1595](https://orcid.org/0000-0003-2302-1595);

Курманова Дана Султанхановна - Докторантка 1 курса, Казахский агротехнический университет им. С.Сейфуллина, ORCID [0000-0003-3854-584x](https://orcid.org/0000-0003-3854-584x);

Бейсембаева Асель Алимжановна - Магистр экономики, Казахский агротехнический университет им. С.Сейфуллина, ORCID [0000-0003-0880-9763](https://orcid.org/0000-0003-0880-9763);

Нургабылов Мурат Нуридинович - Д.э.н., профессор, Таразский инновационно-гуманитарный университет, г.Тараз, Казахстан, <https://orcid.org/0000-0002-8203-7565>

REFERENCES

[1] Nazarbayev N.A. The third modernization of Kazakhstan: global competitiveness / Message from the President of the Republic of Kazakhstan N.A. Nazarbayeva to the people of Kazakhstan / Yelorda, January 31, 2017 / Astana

[2] Vdovenko A.V., Kiselev E.P. World Agriculture: Study Guide / Pacific State University / PNU / Khabarovsk 2010. P. 140. ISBN 978-5-7389-1657-1

[3] Statistical information on the use of funds borrowed by KazAgro National Management Holding JSC from the National Fund of the Republic of Kazakhstan as of December 1, 2015.

[4] Strategy “Kazakhstan – 2050” New political course of the established state. Message of the President of the country to the people of Kazakhstan. Astana, December 14, 2012.

[5] The program of development of the agro-industrial complex of the country in the period up to 2020 (Agrobusiness - 2020)

[6] Sabirov R.K., Kurmasheva S.O. Profiles of the regional development of the agrarian sector. Proceedings of the National Academy of Sciences of the Republic of Kazakhstan. ISSN 2224-526X, a series of agricultural sciences. № 1 2018, p.52-56 site address <http://agricultural.kz/index.php/en/arhiv>. <https://doi.org/10.32014/2018.2224-526X>

Publication Ethics and Publication Malpractice in the journals of the National Academy of Sciences of the Republic of Kazakhstan

For information on Ethics in publishing and Ethical guidelines for journal publication see <http://www.elsevier.com/publishingethics> and <http://www.elsevier.com/journal-authors/ethics>.

Submission of an article to the National Academy of Sciences of the Republic of Kazakhstan implies that the work described has not been published previously (except in the form of an abstract or as part of a published lecture or academic thesis or as an electronic preprint, see <http://www.elsevier.com/postingpolicy>), that it is not under consideration for publication elsewhere, that its publication is approved by all authors and tacitly or explicitly by the responsible authorities where the work was carried out, and that, if accepted, it will not be published elsewhere in the same form, in English or in any other language, including electronically without the written consent of the copyright-holder. In particular, translations into English of papers already published in another language are not accepted.

No other forms of scientific misconduct are allowed, such as plagiarism, falsification, fraudulent data, incorrect interpretation of other works, incorrect citations, etc. The National Academy of Sciences of the Republic of Kazakhstan follows the Code of Conduct of the Committee on Publication Ethics (COPE), and follows the COPE Flowcharts for Resolving Cases of Suspected Misconduct (http://publicationethics.org/files/u2/New_Code.pdf). To verify originality, your article may be checked by the originality detection service Cross Check <http://www.elsevier.com/editors/plagdetect>.

The authors are obliged to participate in peer review process and be ready to provide corrections, clarifications, retractions and apologies when needed. All authors of a paper should have significantly contributed to the research.

The reviewers should provide objective judgments and should point out relevant published works which are not yet cited. Reviewed articles should be treated confidentially. The reviewers will be chosen in such a way that there is no conflict of interests with respect to the research, the authors and/or the research funders.

The editors have complete responsibility and authority to reject or accept a paper, and they will only accept a paper when reasonably certain. They will preserve anonymity of reviewers and promote publication of corrections, clarifications, retractions and apologies when needed. The acceptance of a paper automatically implies the copyright transfer to the National Academy of sciences of the Republic of Kazakhstan.

The Editorial Board of the National Academy of sciences of the Republic of Kazakhstan will monitor and safeguard publishing ethics.

Правила оформления статьи для публикации в журнале смотреть на сайте:

www.nauka-nanrk.kz

ISSN 2518-1483 (Online), ISSN 2224-5227 (Print)

<http://reports-science.kz/index.php/en/archive>

Редакторы *М. С. Ахметова, Т.А. Апендиев, Д.С. Аленов*
Верстка на компьютере *А.М. Кульгинбаевой*

Подписано в печать 07.02.2019.
Формат 60x881/8. Бумага офсетная. Печать – ризограф.
10,5 п.л. Тираж 500. Заказ 1.