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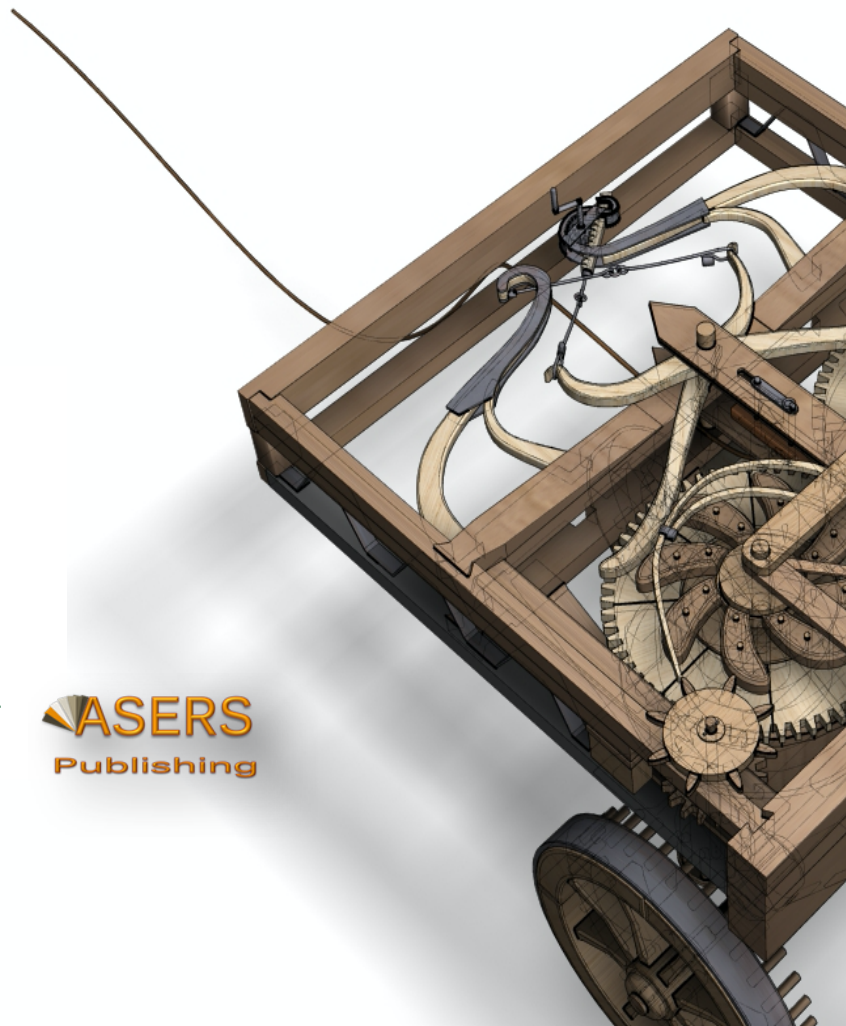
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Journal of Environmental Management and Tourism is an interdisciplinary research journal, aimed to publish articles and original research papers that should contribute to the development of both experimental and theoretical nature in the field of Environmental Management and Tourism Sciences.

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Exploring Environmental Factors for the Sports Clusters Development

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Abstract:

The development of a sports cluster is an important social task, the solution of which contributes not only to the balance of the local economy, but also to the involvement of the most progressive segments of the population in entrepreneurial activities, tending to a proper lifestyle and active leisure. The growth of entrepreneurial activity in this segment of the economy is determined by many factors, including the state policy for the development of sports and tourism. As a global industry, sport is a potentially significant contributor to climate change, both through carbon emissions and through its impact on sustainable development practices. The purpose of the study is to explore environmental factors influencing the development of the sports cluster in the Kazakhstan and further prospects for its development using forecasting and modelling methods. The environmental policy of the sports movement must be carried out within the broader framework of sustainable development. The environmental work of the sports movement is currently focused on the protection and management of resources and the natural environment in order to improve social and economic conditions. All this should be aimed at education on environmental issues and specific measures for its protection.

Keywords: sports; cluster; innovations; information technologies; public-private partnership; quality.

JEL Classification: Z21; Q56; Q57.

Introduction

Sport and the environment are closely intertwined. A healthy environment is essential for playing sports. At the same time, elite sports (Olympic games, world championships, etc.), as well as mass sports, due to the peculiarities of the organization of the training and competitive process, leave their mark on the state of the environment. This is explained by the fact that sport has become a huge industry (3% of global economic activity) and, like any industry, cannot but leave its ecological footprint in nature.

Climate change is what is probably the biggest challenge facing humanity in this century. Numerous sports associations and clubs, as well as athletes belonging to these organizations, face the adverse effects of climate change on health, infrastructure and process organization (Dingle and Stewart 2018).

Analyzing the impact of ecology on the development of the sports cluster, we note that there are both positive and negative aspects of the impact. The positive effects of climate change on the world of sport must be taken into account. Overall, global warming is likely to increase average comfort levels (Stamatakis *et al.* 2019). For many outdoor sports, this means that the outdoor season can start earlier and end later, which in turn increases the gym's capacity for competitive indoor sports (Heaney *et al.* 2019). Extended seasons and more

sunny days will increase annual exposure to ultraviolet radiation, having a preventive effect on symptoms of depression (seasonal affective disorder), increase vitamin D levels, and reduce the risk of deficiency-related diseases such as osteoporosis (Veliyeva *et al.* 2018).

According to Bernard *et al.* (2020), it is increasingly recognized that between sport and climate there is a bidirectional relationship, since sport affects and is influenced by the climate system, thereby, according to (McCullough, Orr and Kellison 2020) forming a new sub-discipline "Sports ecology", which covers the interaction of a person with the natural environment in a broad sense and in the context of sports management.

There are also publications such as Dingle, Dickson and Stewart (2022) or Orr and Schneider (2018), which analyze the adaptation of athletes, fans, sports industry facilities to new climatic conditions. Scott *et al.* (2022) conducts a study investigating how climate change affects the viability of sports. There are studies examining the suitability of cities for hosting future Winter and Summer Olympic and Paralympic Games (DeChano-Cook and Shelley 2019).

For extreme sports such as mountain climbing, ski jumping, etc. natural-climatic and ecological conditions are of great importance (Townsend *et al.* 2023). Some research focuses on how to better measure and analyze the performance of the winter sports industry ecosystem, considering the scientific nature, availability and integrity of data selection (Hongye and Di Peng 2022).

Thus, climate change is associated with health risks for both professional and amateur athletes. Sports organizations must respond to these developments, where the starting point for doing so is a summary of the currently discussed health risks associated with sports:

- increase in heat waves;
- an increase in the number of extreme weather events;
- an increase in the level of ultraviolet, ozone and allergens and the spread of infectious diseases (Schneider *et al.* 2022).

1. Sport Clusters and Sustainable Environment. Importance and Impact

Sport needs a clean and healthy environment, just as the environment should not be destroyed, depleted and degraded under the onslaught of sport. Everyone involved in sport has a responsibility to achieve sustainable environmental development in sport, and caring for the environment is an important challenge in the fight for clean and healthy sport in the third millennium. Therefore, some policies and measures are proposed to develop sports in a sustainable environment:

- Collection, storage and dissemination of information, creation of relevant European databases, monitoring, regular updating and analysis of information;
- Approval of a common structure: for the development of laws and regulations compatible with the status of European countries; analysis of the positive experience of both international and national sports federations and organizations; systematic monitoring of the implementation of regulations in the organization and preparation of all sports events from the Olympic Games to the region;
- Organization of permanent services for the analysis and evaluation of indicators of natural resources used in sports, *i.e.*, land, water, natural resources, materials for the manufacture of environmentally friendly sports equipment, the use of natural resources in the formation of networks of sports facilities, etc.;
- Problems associated with the process of active recreation of the population, including traffic flow control: accessible placement of sports facilities. Taking care of a safe approach, taking into account the fact that the approximate distance to the sports facility should not exceed 3 km. Problems that arise in the operation of transport involved in sports, namely the pollution of clean mountainous areas for skiing and *so on*;
- Critical discussion about the new sport in terms of its impact on the environment. Long-term observation of new practices and technologies used in outdoor sports, such as snow guns;
- Expansion of the network of educational programs on the interaction of sports and the environment, including environmental education within the framework of sports programs in schools. Collaboration between groups involved in environmental protection, education and sports. Involvement of famous athletes in the dissemination of educational programs on environmental protection;
- Given the growth of the world's population, that is, the search for new ways to play sports without endangering the environment, it is necessary to continue to work within the framework of the "Sports for All" program and how it is implemented;
- Financial incentives for doing business, such as the modernization of sports facilities, measures to reduce the number of sports facilities in accordance with the environmental damage caused by sports activities;

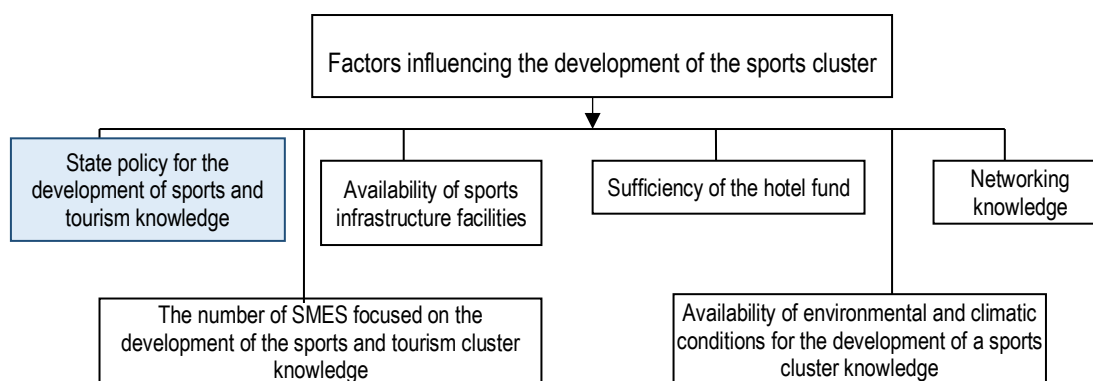
introduction of prizes for the promotion of "environmentally important" projects, awarded to authors, structures, events or organizations (blue flag for a clean coast, green label, golf course balance, etc.).

Sport is important for the state, since, in addition to contributing to the economy, the development of sport is associated with social innovations aimed at solving social problems (Svensson 2019). Before presenting an analysis of the development of a sports cluster, let us consider the concept of a cluster and its meaning. Clusters are characterized by the interaction in a limited geographical area of three main groups:

- government agencies;
- private enterprises and organizations that are the direct executor of services;
- public institutions, organizations of the financial sector, infrastructure, scientific and educational institutions, *i.e.*, all those organizations that ensure the operation of the cluster.

The use of mechanisms for organizing cluster structures requires an assessment of the main factors affecting the efficiency of the cluster. These factors include the following (Figure 1).

Figure 1. Factors influencing the development of sports cluster



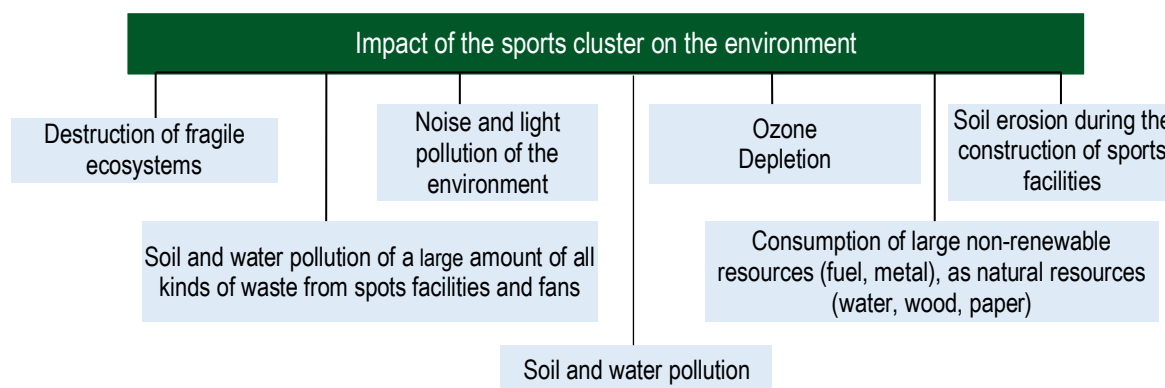
Source: compiled by authors

Sport needs a clean and healthy environment, just as the environment should not be destroyed, depleted and degraded under the onslaught of sport. Two trends characterize the beginning of the third millennium:

- the first is that the global human ecosystem is in danger due to a serious imbalance in the production and distribution of goods and services;
- the second, so-called "threatening" trend is associated with accelerated changes in the extremely uneven economic and social development of individual regions. This process needs to be regulated to prevent painful environmental and social disasters.

In sports, maintaining green playgrounds requires the use of pesticides and herbicides, as well as millions of liters of water per year. Swimming pools use chlorine gas to disinfect the water, and locker rooms are cleaned with bleach. Major sporting events leave behind a large amount of waste. Standard sports venues and sporting events lead to increased energy consumption, air pollution, greenhouse gas emissions and increased waste disposal. Thus, although sports organizations are rarely major polluters, their environmental footprint is often quite deep. In this regard, it is possible to designate the impact of the sports cluster (sports activities) on the environment (Figure 2).

Figure 2. Sports cluster and the environment



Source: compiled by authors

According to Figure 2, sports clusters have an impact on the environment in the following ways:

- in sports, maintaining green playgrounds requires the use of pesticides and herbicides, as well as millions of liters of water per year;
- swimming pools use gaseous chlorine to disinfect water, and locker rooms are wiped with bleach. Major sporting events leave behind a large amount of waste. Just after a typical basketball or football game, about 50,000 plastic cups are thrown into the trash. It is estimated that each viewer leaves behind 2 kilograms of food waste, most of which requires recycling;
- operation of standard sports venues and sporting events lead to increased energy consumption, air pollution, greenhouse gas emissions and increased waste disposal, as well as ozone depletion, loss of habitat and biodiversity, soil erosion and water and air pollution.

This is just a small illustration of how sport affects the environment. Therefore, the main tasks of the development of sports clusters in interaction with the environment are:

- promoting the integration of environmental considerations into sports activities;
 - using the popularity of sports to raise awareness of environmental issues and educate the public, especially young people, in a spirit of respect for the environment;
 - promote the development of a sports base and environmentally friendly production of sports goods.
- Encourage sporting goods businesses to be more aware of and consider the impact of such products on the environment.

2. Sport Clusters. Activities and Environmental Issues

The purpose of creating a sports cluster is the development of mass and youth sports, the creation of competitive high-performance sports in the international arena. Increasing competitiveness and better development of sports in the cluster will be due to the better interaction of the structural elements of the cluster, their consolidation on the selected product or service, the use of innovations and the best world experience both for the creation of sports infrastructure facilities and for sports, the presence of state preferences, a synergistic effect, the best information interaction of cluster members located in a limited geographical area.

Porter (2018) theory's founder understands a group of geographically adjacent interconnected companies and related organizations operating in a certain area, characterized by a common activity and complementary to each other.

Yelkikalan (2018) argues that clusters are businesses, specialized vendors, service providers and other related institutions of a particular sector that are connected to each other and concentrated in a particular geographic region. Clusters have emerged because they increase productivity and competitiveness, and to benefit from government incentives and synergistic outcomes.

International competition based on excellence and the need to have a competitive and innovative industry have encouraged the emergence of new forms of competitive advantage in the form of partnerships between businesses, universities, research institutes and governments called clusters. This form of cooperation has been defined by expert terms such as cluster research, cluster innovation, competitiveness pole or excellence pole.

Since the 1990s, politicians have begun to express their support for clusters as a platform for innovation. Clusters are geographic concentrations where specialized companies and institutions are interconnected to provide an environment conducive to innovation. They lower the barriers to turning new ideas into business by taking advantage of globalization. The application of innovations in sports is especially relevant for a number of reasons:

- the competitive nature of sport makes the industry the most demanding for innovation;
- the participation of various interconnected actors typical of sports clusters allows for a networked perspective that has proven to be key to innovation (Dagnino *et al.* 2018).

With the rapid development of the economy and technology, modern information technology is penetrating into the field of sports. At present, the organization and management of international and domestic sports competitions, relevant auxiliary training of athletes, sports equipment research and development, sports information network construction and sports application development, computer information technology are indispensable. Application in teaching physical education with the development of competitive sports and technologies, sports performance is becoming closer to the limits of human physical capabilities, so it is becoming increasingly difficult to set a new world record.

Innovation research in sports is concerned with: technological innovation and various sources of the latter, including firm, user and networks (Gerke 2018). Etzkowitz (2018) argues that for the transfer of technology and

innovation between participants, the associative structure requires the participation of the following categories of participants in a cluster designed in accordance with the Triple Helix model:

- universities, research institutes, vocational training centers offering products, processes, innovative services, training;
- enterprises (including start-ups and subsidiaries) that are dedicated to innovating and which should ideally lead and absorb the aforementioned tender;
- central, regional or local authorities to promote innovation processes (Etzkowitz and Leydesdorff 2018).

A favorable business environment is the main aspect influencing competitiveness. Such an environment includes the following key factors: public administration, quality of institutions, infrastructure, technological and innovative development, quality of human resources, economic liberalization, financial system and business strategies (Ahmedova 2019).

The development of information technologies leads to the development of information networks of cluster members. The sports cluster concept is a middle-level theory that explains value creation in localized sports industries through the lens of a service-dominated logic. Sports management and marketing scholars need to focus more on participant networks and associated inclusive empirical research rather than isolated elements and individual participants in the sports industry (Gerke *et al.* 2020).

The sports industry is an important component of the economy. As example, the US sports industry is about 2.75% of US GDP, the direct impact of sport combined with its multiplier (indirect and induced) effect is 2.98% of the total gross value added in Europe (Yan Wang *et al.* 2019).

Spin-off benefits are not uniform across sports and business sectors. For every 100 baseball stadium visits, there are approximately 29 visits to nearby catering and lodging establishments and about 6 visits to local retail outlets. Stadiums and arenas stimulate local economic development. On average, a sports facility generates about \$11.3 million in additional spending on local food, lodging, and retail. Historically, local and state governments in the United States have allocated significant amounts of public funds to support the construction and maintenance of sports facilities. At least in part, these public investments have been motivated by the positive side effect that stadiums and arenas can create for local businesses (Abbiasov *et al.* 2022).

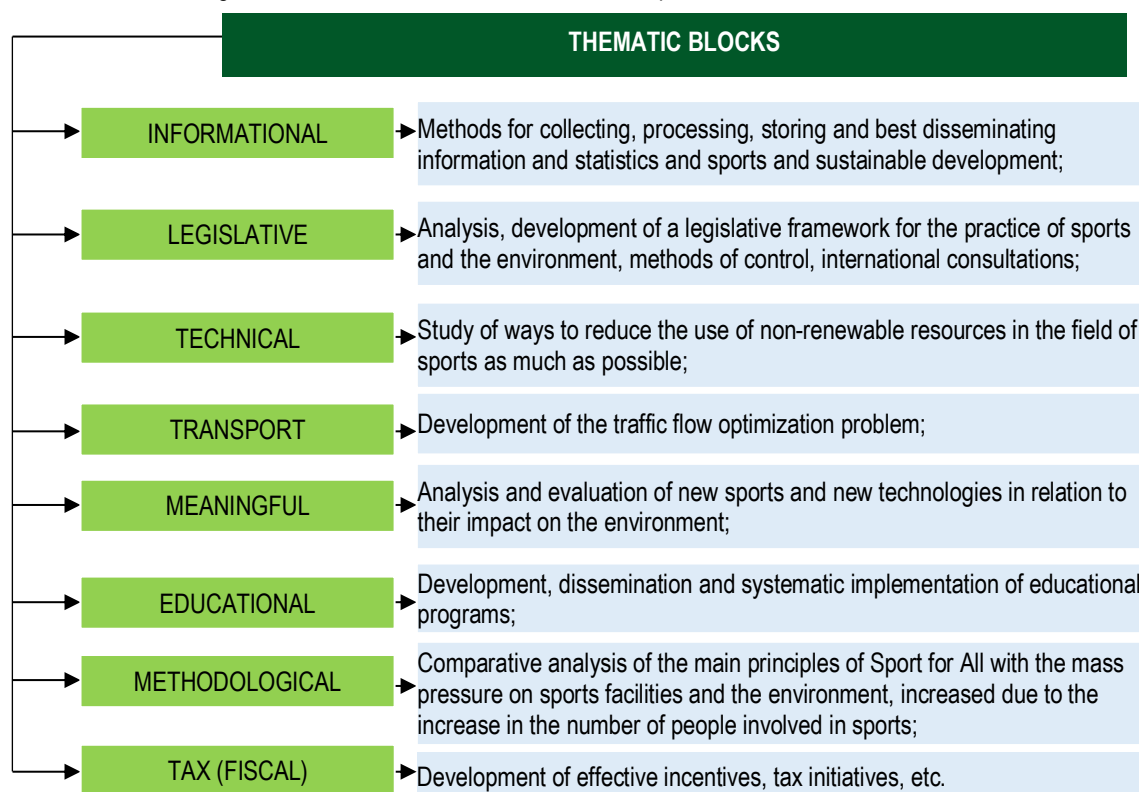
Thus, the development of sports is very important for any state, both in terms of economic development and the solution of many social problems. One of the progressive forms of sports development is the creation of sports clusters in harmony with environmental problems. For such harmonization, the authors propose the following thematic blocks (Figure 3). Environmental policy should be aimed at the long term in order to ensure long-term sports activities, however, many (especially developing) countries ignore this, preferring commercial and financial short-term benefits.

The main measures proposed for the development of sports in a sustainable environment:

- collection, storage and wide dissemination of information, monitoring, regular updating and analysis of information;
- approval of common structures: for the development of laws and regulations compatible with the status of European countries;
- systematic control over the implementation of regulations in the organization and preparation of all sports events;
- organization of a permanent service for the analysis and evaluation of indicators of natural resources used for sports, *i.e.*, the use of land, water, natural resources, materials for the manufacture of eco-friendly sports equipment, natural resources in the formation of a network of sports facilities, etc.;
- control over traffic flows associated with the process of active recreation of the population, which includes the problems of: accessible placement of sports facilities; ensuring safe approaches, taking into account the fact that the approximate distance to sports facilities should be no more than 3 km; as well as problems that arise during the operation of transport serving sports, *i.e.*, pollution of clean mountain areas for skiing, *etc.*;
- control over the environmental consequences of the development of new sports and technologies (industry) of sports, which includes: a critical discussion of new sports in terms of their impact on the environment; long-term observations of new practices and new techniques used in outdoor sports, such as snow cannons, etc.
- expanding the network of educational programs on the interaction between sport and the environment, which would include environmental education as part of sports programs in schools; cooperation between groups working on environmental protection, education and sports; reserving time for environmental education in sports clubs as part of the training process; information and education for sports management programs; attracting famous athletes to the dissemination of educational programs on environmental protection;

- the introduction of new eco-forms of activities within the framework of the "Sport for All" program and methods for their implementation, taking into account the increased population of the planet, *i.e.*, finding new ways to sport without endangering the environment;
- the use of practical initiatives and incentives, which include: financial incentives for work such as upgrading sports facilities; measures to reduce the number of sports facilities, depending on the harm done to the environment; the use of all forms of mass media for effective and complete information on measures to protect the environment from destruction by sports activity; introduction of awards for encouraging "eco-significant" projects, *etc.*

Figure 3. Thematic blocks of harmonization of sports and environmental issues



Source: compiled by authors

2.1. Analysis of the Emerging National Sport Industry

The priority of the state policy in the field of sports is the improvement of the nation by means of physical education, the development of mass and youth sports, as well as improving the image of Kazakhstan through sports results in the international arena.

Table 1. Dynamics of indicators of physical culture and health-improving work in the Republic of Kazakhstan

Indicator	2016	2017	2018	2019	2020	2021	Deviation of 2021 indicators from 2016
Sports organizations and institutions, units	19.882	20.207	20.934	21.181	21.334	22.369	2.487
Sports clubs, units	670	633	247	204	263	278	-392
People involved in physical culture and sports, thousand people	4.863,7	5.204,4	5.475,9	5.033,5	5.953,9	6.535,0	1.671
Children and school students involved in physical culture and sports, thousand people	1.491,6	1.586,9	1.834,4	357,1	1.938,6	2.048,3	557
Disabled people involved in physical culture and sports, thousand people	27,4	29,7	31,9	32,8	38,4	10,5	-17
Sports' Masters of Kazakhstan, people	1.697	1.804	1.865	1.918	1.025	1.889	192
Sports' Master of International class of Kazakhstan, people	334	328	391	371	179	159	-175

Source: compiled by authors according to <http://www.stat.gov.kz>

Table 1 shows that from 2016 to 2021, the number of sports organizations and institutions increased by 2487, the number of sports clubs decreased significantly by 392 from 670 to 278, the number of people involved in physical culture and sports increased from 4,863.7 to 6535.0 thousand people. The number of children and school students involved in physical culture and sports increased by 5577 thousand people.

Table 2. The volume of sports and recreation services rendered in the Republic of Kazakhstan by regions, thousand tenge

Region	2016	2017	2018	2019	2020	2021	Deviation of 2021 indicators from 2016
Republic of Kazakhstan	160.921.060	80.856.651	176.390.603	223.454.229	188.501.492	421.380.340	260.459.280
Akmola	5.280.923	6.367.387	7.914.414	9.127.158	8.465.154	8.567.037	3.286.114
Aktuubinsk	6.285.766	6.193.380	5.535.514	5.975.312	6.182.230	7.018.377	732.611
Almaty	7.509.378	10.531.139	11.482.776	12.820.993	12.305.115	15.265.350	7.755.972
Atyrau	6.343.025	6.709.985	6.346.907	7.962.909	7.398.459	8.004.377	1.661.352
West Kazakhstan	5.641.534	5.749.337	6.829.917	6.150.546	7.599.911	9.898.934	4.257.400
Zhambyl	4.833.225	5.562.501	5.338.450	6.022.272	6.278.796	7.420.124	2.586.899
Karaganda	9.291.743	13.314.574	14.369.248	16.138.877	16.483.726	13.790.345	4.498.603
Kostanay	6.024.118	7.345.997	8.388.720	9.155.596	7.583.639	5.364.093	-660.025
Kyzylorda	3.920.317	5.523.142	6.826.567	8.470.530	7.903.964	7.866.030	3.945.713
Mangistau	3.688.222	3.629.464	4.111.537	6.330.870	5.723.909	8.243.861	4.555.640
South Kazakhstan	9.180.610	11.438.981					-
Pavlodar	8.667.967	9.886.038	7.989.030	8.544.382	12.495.731	10.335.639	1.667.672
North Kazakhstan	2.964.066	3.081.092	4.119.989	4.046.017	5.172.206	5.966.918	3.002.853
Turkestan			3.544.991	4.842.951	5.512.253	6.418.246	-
East Kazakhstan	9.576.847	11.487.231	9.324.917	8.789.328	9.626.604	10.905.221	1.328.374
Astana city	40.323.052	36.618.338	26.277.156	47.956.994	20.277.480	28.757.918	-11.565.134
Almaty city	31.390.267	37.418.058	38.190.100	48.612.958	37.639.965	256.252.417	224.862.150
Shymkent city			9.800.364	12.506.527	11.852.342	11.305.448	-

Source: compiled by authors

Table 2 shows that in 2020 the volume of sports and leisure services decreased due to the COVID-19 coronavirus pandemic. But in 2021, the volume of services increased by 2.23 times. The volume of sports and leisure services in the Republic of Kazakhstan is 0.5% of the country's GRP. Against the background of an increase in sports and recreation services in the Republic of Kazakhstan, in 2021 in the Karaganda region, on the contrary, there was a decrease in the volume of services by 16.5%, which indicates insufficient work on the organization of sports services.

Table 3. Point forecast of the indicator "Sports services and recreation services in the Republic of Kazakhstan", 2022-2024

Year	Point forecast, thousand tenge
2022	559.783.189
2023	726.020.639
2024	921.145.723

Source: compiled and calculated by authors

As can be seen from Table 3, according to the forecast, the volume of sports and recreation services will increase and in 2024 will reach 921,145,723 thousand tenge. At the end of the calendar year, the budget program of the Karaganda region for the development of sports for the coming period is approved (Table 4).

Table 4. Budget program of the Department of Physical Culture and Sports of the Karaganda region, 2022 - 2024

Expenses under the budget program, total						
Indicator	Unit	Reporting year		Planned period		
		2020	2021	2022	2023	2024
Expenses under the budget program	thousand tenge	107.744,1	148.573	145.358	136.350	138.439

Source: compiled and calculated by authors

Table 4 shows that expenditures under the budget program in 2022 will decrease by 3,215 thousand tenge compared to 2021, and in 2023 they will decrease by 9,008 thousand tenge compared to 2022. In addition to

budget funds, it is necessary to use private capital funds, for example, through the implementation of public-private partnership projects. However, investments in this direction account for only 0.5% of the total investment in the Karaganda region (Table 5).

Table 5. Sources of financing for the sports sector of the region in 2021

Investments in fixed assets	In % to the corresponding period of the previous year	Including						
		Budget resources		Own funds	Bank loans		Other borrowed funds	
		Republican	Local		Total	of which foreign banks	Total	of which non-residents
4.643.045	71,9	933.671	2.840.475	868.899	-	-	-	-

Source: compiled by authors

Table 5 shows that 81.2% of the financing of the sports sector in the Karaganda region comes from budget funds. These funds are not enough to create world-class infrastructure facilities.

In the Karaganda region, there is a mismatch in the development of the structural components of both mass and elite sports. There is an extremely uneven development of sports in the settlements of the Karaganda region, there is a huge difference in the development of sports in urban and rural areas, between the observed demand for sports services and the amount of funding for the creation of infrastructure facilities and the available areas of sports facilities. Planned indicators in the field of sports cannot be fully provided with the necessary resources. One of the main areas of work is the training of a sports reserve and high-class athletes. The existing sports infrastructure for children and youth sports does not meet the criteria for training international level athletes. There is a lack of participation and disinterest of the necessary organizations in the implementation of sports programs. New organizational and economic mechanisms are needed for the development of physical culture and sports in the Karaganda region.

2.2. Organizational and Economic Mechanisms of the Sports Cluster

An economic mechanism that can ensure the participation of all organizations necessary for the implementation of sports programs and, according to a single plan, link the proportional development of all components of sports, is a cluster. Clusters are characterized by the interaction within a limited geographical area of three main groups: state bodies; private enterprises and organizations that are the direct executor of services and public institutions - organizations of the financial sector, infrastructure, scientific and educational institutions, i.e., all those organizations that ensure the operation of the cluster. Thus, we propose to create a sports cluster in the Karaganda region.

Increasing competitiveness and better development of sports in the cluster is due to the better interaction of the structural elements of the cluster, their consolidation on the selected product or service, the use of innovations and the best world experience both for the creation of sports infrastructure facilities and for sports, the presence of state preferences, a synergistic effect, better information interaction of cluster members located in a limited geographical area. Consolidation of cluster members on a certain sports product contributes to their cooperation, concentration of scientific, organizational, financial and production resources on this sports product. Thus, there is an increase in the competitiveness of big-time sports, there is a better development of mass sports.

To develop innovations in the sports field, the cluster includes scientific organizations. The main role in the formation and functioning of the sports cluster of the Karaganda region should be played by the state, because it is the state that is interested in the development of mass sports and sports of high achievements.

Organizational mechanisms of the sports cluster of the Karaganda region include:

- formation of a body for the creation, management and control of the sports cluster of the Karaganda region;
- information support;
- organization of staffing, advanced training, retraining of personnel;
- organization of scientific and innovative support, research and development;
- regulatory support;
- creation of quality standards for sports services and infrastructure, development of quality management standards for the functioning of the cluster;
- formation of a brand and a positive image of the sports cluster;
- support for entrepreneurship participating in the cluster, business incubators, creation of new entities;
- selection and acquisition of resource support;

- organization of sports development in priority areas

Economic mechanisms include:

- forecasting and planning of sports activities and sports infrastructure of the cluster. Here we are talking about the concept of developing a sports cluster, a strategic program that outlines the phased planned development of sports, sports infrastructure and its components. Forecasting the sports services market is of great importance. Since this allows you to correctly determine the guidelines for the development of large-scale and mass sports;
- financing of sports organizations. Here the sources of financing of the sports cluster are indicated. These can be budgets of various levels, private and public sources, investment sources, sponsorship, and so on;
- logistics and resource support. This group includes infrastructure facilities, staffing;
- measures of state support include various methods and means of assistance from the state to the development of sports. These can be programs, tax preferences, improvement of the investment climate, simplification of customs formalities, and so on.

For the sports cluster of the Karaganda region, the purpose of which is to create competitive high-performance sports in the international arena and the qualitative development of mass sports, we will introduce a new concept of "Quality of sports cluster services". Clusters are characterized by the interaction within a limited geographical area of three main groups: state bodies; private enterprises and organizations that are the direct executor of services and public institutions - organizations of the financial sector, infrastructure, scientific and educational institutions, i.e., all those organizations that ensure the operation of the cluster.

"Quality of sports cluster services" is a generalized complex indicator. The generalized complex indicator of the quality of sports cluster services will be a function of three groups of indicators:

- quality of management of state bodies;
- quality of services and products of private enterprises and organizations;
- quality of services and products of public institutions.

Accordingly, we introduce the concept of "Quality Management of Sports Cluster Services", which includes quality management of government bodies, quality management of services and products of private enterprises and organizations that are the direct executor of services and quality management of services and products of public institutions.

The quality of management of state bodies is characterized by the proportion of erroneous decisions. The presence of horizontal links between specialists and departments of various government departments and organizations will contribute to a decrease in the percentage of erroneous decisions. The presence of an information base of decision-making algorithms, as well as the availability of monitoring the activities of a sports cluster, will also contribute to a decrease in the percentage of erroneous decisions. availability of complete information about the activities of the cluster, necessary for making a decision. Conducting in-depth analyzes, as well as the availability of forecasts, will also reduce the percentage of erroneous decisions. For the qualitative development of sports, it is necessary to apply quality management standards. For the sports cluster of the Karaganda region, ISO and TQM series standards can be applied. One of the main principles of TQM "Total Quality Management" is quality management in all areas and at all stages of the business process. In the sports cluster of the Karaganda region, it is also necessary to ensure quality in the three main branches of the cluster participants.

As shown in the strategic guidelines of the Ministry of Culture and Sports of the Republic of Kazakhstan, the urgent task of the state is to maintain the stability of the existing system, which requires the development of a national youth policy (Table 6).

With a public-private partnership, due to the significant duration of projects of 3-30 years, an entrepreneur can invest significant investment funds in a project. The duration of the projects makes it possible to recoup such significant investments. As an object of public-private partnership, an entrepreneur's own property can enter: sports facilities, or buildings converted for sports purposes. In the second case, a long-term lease system can be applied. A mechanism is possible when the state provides per capita funding to participants in sports sections through the state reimbursement of payment for section participants. Under this mechanism, the state can reimburse up to 75 percent of the cost of payment. This also solves the problem of the high cost of visiting sports infrastructure facilities of private property, and, consequently, the greater mass participation in sports. Another option is to ensure guaranteed sales, for example, when an entrepreneur takes a sports school as a project object.

Table 6. Strategic directions of the Ministry of Culture and Sports of the Republic of Kazakhstan, 2022-2024

№	Index	Unit	Plan			
			2021	2022	2023	2024
1	Coverage of citizens involved in physical culture and sports:	%	33,0	33,0	34,0	35,0
	- children and teenagers	%	17,1	17,2	17,3	17,4
2	The share of disabled people involved in physical culture and sports	%	12,7	12,0	12,1	12,2
3	The share of citizens involved in national sports of the total number of people involved in physical culture and sports	%	8	8,2	8,4	8,6
4	The share of graduates of republican specialized boarding schools-colleges of the Olympic reserve who fulfilled the standards of candidates for master of sports, etc. of the total number of graduates	%	89,5	90,0	90,5	91,0
5	The share of sports specialists of republican organizations in the field of physical culture and sports	%	56,6	56,6	56,6	56,6
6	The share of the actual workload of the republican sports facilities	%	85,0	85,3	85,6	85,9

Source: compiled by authors

In the conditions of a sports cluster, the state can apply tax preferences. The development of public-private partnership projects should be planned, by creating a "Roadmap for sports cluster projects". This will systematically provide funding for the creation of sports infrastructure both at the expense of budgetary funds, funds from private partners, foreign investment and sponsorship.

The speed and correctness of decision-making depends on the lack of data for decision-making. In order to have enough data to make decisions, we propose to organize monitoring of the activities of the sports cluster. Monitoring tasks: collection of information on the activities of the cluster according to the indicated parameters; analysis of the information received, compilation of reports on the current activities of the cluster and their submission to the governing bodies for decision-making; prompt response when certain parameters of the cluster activity reach critical values; drawing up forecasts and options for the development of the situation in the activities of the cluster.

Conclusion

The conducted studies show that the field of sports has a significant impact on both the economy and the environment. The conducted studies have shown that in the modern world there is a constant search for new effective forms and types of commercial activities in the system of physical culture and sports. The relevance of the study lies in the fact that based on the analysis of trends in the development of the global and emerging national sports industry, the main conclusions were made and recommendations were developed for its further development, taking into account the influence of environmental impact factors.

According to the forecast, the volume of sports and leisure services will increase and in 2024 will reach 921,145,723 thousand tenge. Mass sports are of great importance as a positive social effect. The sport of high achievements plays a significant role in increasing the prestige of the state, which indirectly affects the state's economy, by attracting foreign investment, concluding international agreements, and increasing tourist flows, all these for a sustainable development and healthy environment.

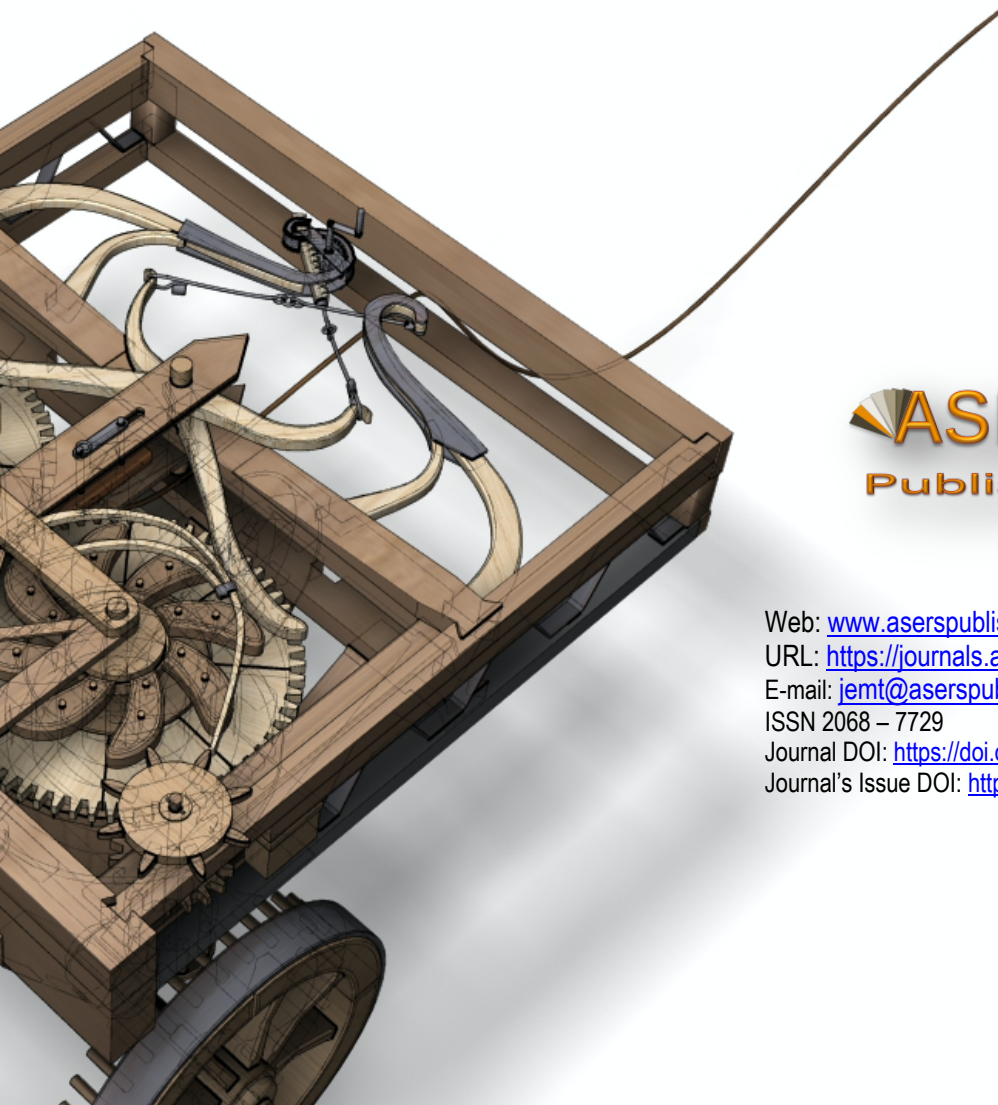
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