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FORMING A STRATEGY FOR SUSTAINABLE DEVELOPMENT OF REGIONS ON THE BASIS OF INSTITUTIONAL MECHANISMS

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Abstract: The article provides a comprehensive analysis of the role of institutional mechanisms in the formation of a sustainable development strategy for regions and their impact on regional entrepreneurial activity and economic stability. As a result of institutional reforms aimed at improving the business environment in Uzbekistan, reducing bureaucratic barriers and optimizing management processes, the dynamics of economic activity, the number of business entities and the share of small businesses in GDP were studied across regions. The study found that regional differences, uneven development of infrastructure and the institutional environment justify the need to form sustainable development strategies based on a differentiated approach. Also, priority areas of sustainable development were systematized across economic regions, taking into account specialization, development factors and limiting factors. As a result, it was scientifically substantiated that improving institutional management is an important factor in increasing regional competitiveness, strengthening investment attractiveness and ensuring long-term sustainable growth of the national economy.

Key words: regional development, sustainable development strategy, institutional mechanisms, regional differences, business environment, economic regions, small business, investment attractiveness, differential approach.

Annotatsiya: Maqolada mintaqalar uchun barqaror rivojlanish strategiyasini shakllantirishda institutsional mexanizmlarning roli va ularning mintaqaviy tadbirkorlik faoliyati va iqtisodiy barqarorlikka ta'siri keng qamrovli tahlil qilingan. O'zbekistonda biznes muhitini yaxshilash, byurokratik to'siqlarni kamaytirish va boshqaruv jarayonlarini optimallashtirishga qaratilgan institutsional islohotlar natijasida mintaqalar bo'yicha iqtisodiy faoliyat dinamikasi, tadbirkorlik sub'ektlari soni va kichik biznesning YalMdagi ulushi o'rganildi. Tadqiqot shuni ko'rsatdiki, mintaqaviy farqlar, infratuzilma va institutsional muhitning notekis rivojlanishi differentsial yondashuvga asoslangan barqaror rivojlanish strategiyalarini shakllantirish zarurligini asoslaydi. Shuningdek, barqaror rivojlanishning ustuvor yo'nalishlari ixtisoslashuv, rivojlanish omillari va cheklovchi omillarni hisobga olgan holda iqtisodiy mintaqalar bo'yicha tizimlashtirildi. Natijada, institutsional boshqaruvni takomillashtirish mintaqaviy raqobatbardoshlikni oshirish, investitsiya jozibadorligini mustahkamlash va milliy iqtisodiyotning uzoq muddatli barqaror o'sishini ta'minlashda muhim omil ekanligi ilmiy jihatdan asoslandi.

Kalit so'zlar: mintaqaviy rivojlanish, barqaror rivojlanish strategiyasi, institutsional mexanizmlar, mintaqaviy farqlar, biznes muhiti, iqtisodiy mintaqalar, kichik biznes, investitsiya jozibadorligi, differentsial yondashuv.

Аннотация: В статье представлен всесторонний анализ роли институциональных механизмов в формировании стратегии устойчивого развития регионов и их влияния на региональную предпринимательскую активность и экономическую стабильность. В результате институциональных реформ, направленных на улучшение деловой среды в Узбекистане, снижение бюрократических барьеров и оптимизацию управленческих процессов, была изучена динамика экономической активности, количество хозяйствующих субъектов и доля малого бизнеса в ВВП по регионам. Исследование показало, что региональные различия, неравномерное развитие инфраструктуры и институциональной среды обосновывают необходимость формирования стратегий устойчивого развития на основе дифференцированного подхода. Также были систематизированы приоритетные направления устойчивого развития по экономическим регионам с учетом специализации, факторов развития и ограничивающих факторов. В результате было научно обосновано, что совершенствование институционального управления является важным фактором повышения региональной конкурентоспособности, укрепления инвестиционной привлекательности и обеспечения долгосрочного устойчивого роста национальной экономики.

Ключевые слова: региональное развитие, стратегия устойчивого развития, институциональные механизмы, региональные различия, деловая среда, экономические регионы, малый бизнес, инвестиционная привлекательность, дифференцированный подход.

ENTRANCE

In the context of modern economic development, the issue of sustainable development of regions is becoming one of the priority areas of national economic policy. In an environment of increasing global competition, the effective use of the economic, demographic and infrastructural potential of regions is a decisive factor in ensuring the overall sustainable growth of the country. Therefore, in addition to the traditional resource approach in the formation of regional development strategies, there is a need to improve institutional management mechanisms. The level of development of the institutional environment is an important factor in stimulating economic activity in the regions, supporting entrepreneurship and ensuring the efficient use of resources.

In recent years, Uzbekistan has been implementing large-scale institutional reforms aimed at modernizing the public administration system, reducing bureaucratic processes, and creating a favorable business environment for business entities. As a result of these reforms, an increase in the number of business entities in the regions, an expansion of the share of small businesses and private entrepreneurship in the economy, and increased investment activity are observed. However, the uneven level of economic development, infrastructure provision, and business environment across regions require a differentiated approach to developing sustainable development strategies. This situation creates the need to form institutional mechanisms in accordance with regional characteristics.

In this regard, the formation of a strategy for sustainable regional development based on institutional mechanisms is of scientific and practical importance. Such an approach serves to reduce socio-economic disparities between regions, increase the efficiency of economic resource use, and strengthen regional competitiveness. The purpose of this article is to scientifically substantiate the role of institutional management mechanisms in the formation of regional development strategies and identify priority areas for ensuring sustainable development across regions.

LITERATURE ANALYSIS ON THE TOPIC

The issue of forming a strategy for sustainable regional development is being studied in modern economic literature at the intersection of theories of regional economics, institutional management, and sustainable development. The World Bank's conceptual approach to regional development interprets the spatial uneven distribution of economic activity as a natural process and argues that disparities between regions can be reduced through effective institutional policies and infrastructure development [1]. This approach indicates the need to take into account the institutional environment, along with the economic and geographical characteristics of regions, when developing regional development strategies.

The issue of forming territorial strategies within the framework of the concept of sustainable development is studied in close connection with the system of Sustainable Development Goals developed by the UN. According to this approach, territorial development should be carried out by ensuring the harmony of economic growth, social inclusion and ecological balance [2]. The theoretical views put forward by Sachs also emphasize the institutional component of sustainable development, and an effective governance system is seen as the main condition for long-term economic stability [3]. These ideas scientifically substantiate the decisive role of institutional mechanisms in the formation of territorial development strategies.

The issues of multi-level governance and institutional coordination in territorial development have been widely covered in OECD studies. The OECD Regional Outlook report notes the need to ensure institutional coherence between central and local levels of government in order to reduce territorial disparities [4]. At the same time, it emphasizes the importance of adapting governance mechanisms to territorial characteristics for the effective implementation of territorial development policies. This approach scientifically justifies the need to develop differentiated strategies across regions.

The issue of the impact of institutional governance on regional economic development is also reflected in the experience of the European Union's territorial integration policy. Within the framework of integration policy, strengthening institutional mechanisms, targeted resource allocation, and increasing the efficiency of territorial governance are considered important factors in reducing socio-economic disparities between regions [5]. This experience confirms the need to improve the system of institutional mechanisms in the formulation of regional development strategies.

In recent years, the role of the quality of public administration in sustainable regional development has also been substantiated in the SIGMA principles. According to these principles, institutional indicators such as transparency, accountability, efficiency and quality of services are important criteria for ensuring the sustainability of regional development [6]. This approach indicates the improvement of institutional governance mechanisms as a priority scientific direction in the formulation of regional development strategies.

In general, the analyzed literature shows that institutional mechanisms play a central role in ensuring sustainable regional development. Scientific sources emphasize that the effectiveness of regional development is closely related to the quality of the management system, the level of institutional coordination, and the implementation of differentiated policies that are appropriate to regional characteristics. In this regard, the issue of improving institutional mechanisms in the formation of a strategy for sustainable regional development is emerging as one of the important areas of modern economic research.

RESEARCH METHODOLOGY

This study used a comprehensive scientific approach to study the issues of forming a sustainable regional development strategy based on institutional mechanisms. The research used methods of systematic analysis, comparison, statistical grouping, dynamic series analysis, and differential assessment across regions. Also, based on regional socio-economic indicators, the dynamics of the number of business entities, their activities, and the share of small businesses in GDP were studied, and the impact of institutional reforms on regional economic development was empirically assessed. As a methodological approach, an integrated analysis model was used, aimed at substantiating differential strategic directions by identifying regional specialization, resource potential, and development limiting factors.

ANALYSIS AND RESULTS

The system of public service provision in Uzbekistan has been radically reformed in recent years, and the "single window" principle has been introduced as one of the important mechanisms aimed at creating favorable conditions for business entities. The main goal of this system is to reduce the complex bureaucratic processes existing in the activities of state bodies, to provide services to citizens and businesses in the fastest, most transparent and efficient way possible. Through the "single window" mechanism, business entities have the opportunity to submit all necessary documents and use the service from one point, without separately contacting various ministries and departments. This, in turn, has significantly simplified the economic environment by reducing time and financial costs.

At the same time, there are some problems with the current system. First of all, due to the lack of full coordination of powers between regional khokimiyats and central agencies, some services are actually being delayed. For example, the lack of independence of regional bodies in making decisions on land allocation or infrastructure connection is wasting the time of many entrepreneurs. Also, the "single window" mechanism is in some cases limited only to receiving documents and delivering them to higher agencies, while the service itself is being provided in other agencies. In addition, the insufficient development of the Internet infrastructure in remote areas and the low digital literacy of the population in using electronic services are also among the factors reducing the effectiveness of the system.

Nevertheless, the "single window" system has made a significant breakthrough in the reform of public services at the republican level. Through this system, the transparency of public services has increased, and trust in state bodies has been strengthened for citizens and entrepreneurs. In addition, the concentration of services on a single platform has strengthened cooperation between state bodies and created the opportunity for more efficient use of resources. Therefore, in the future, it is necessary to further improve this system, in particular, through the full digitalization of services, the expansion of the activities of "single window" centers on the basis of public-private partnerships, and the strengthening of mechanisms for protecting the interests of entrepreneurs through local councils.

The share of users by region allows us to identify regional differences in the provision of public services. Samarkand region, Tashkent city and Kashkadarya region are in the lead, which indicates a high demand for digital services in these regions and a relatively developed level of skills of the population in using the portal. Such results indicate the problem of regional digital inequality and directly affect economic stability. In regions with high indicators, faster and more convenient implementation of public services will reduce bureaucratic barriers for business entities, which will increase investment attractiveness. In regions with low indicators, it is necessary to expand access to public services, develop Internet infrastructure and increase the digital literacy of the population. Equal operation of the single portal across regions will have a positive impact on the overall economic development of the country and reduce regional differences.

The statistics of the leading countries in terms of the number of visits show the activity of the portal not only within the country, but also at the international level. The economic significance of these indicators is that the use of the portal at the international level not only enhances the image of the country, but also creates additional opportunities for strengthening foreign investment and cooperation. Especially considering that Uzbek labor migrants work in many countries, the availability of online services for them strengthens their socio-economic

protection. At the same time, the share of visits from Russia and European countries indicates that digital services have export potential. In the future, the global significance of the portal can be further increased by providing the portal with a multilingual interface, integrating foreign payment systems, and introducing special service packages for international users.

The economic reforms implemented in Uzbekistan in recent years are aimed at improving the business environment, increasing the number of business entities and ensuring their sustainable operation. As a result, the number of registered and operating business entities in the regions is steadily growing, and the share of small businesses and private entrepreneurship in the country's GDP is also increasing. This process ensures not only increased economic activity, but also regional competitiveness, job creation and strengthening socio-economic stability. Therefore, the following tables analyze the registration of business entities, their operation and their share in GDP by region.

In recent years, the number of registered business entities in Uzbekistan has been increasing sharply as a result of encouraging entrepreneurial activity, strengthening state support mechanisms, and reducing bureaucratic barriers through «single window» systems. In particular, the activity of farmers and small business representatives indicates that entrepreneurship is expanding further across regions and contributing to economic diversification (Table 1).

Table 1. Number of registered business entities (excluding farmers and farms)¹

Regions	2018	2020	2022	2024	Difference 2024/2018
Uzbekistan Rep.	278,556	440 202	559,862	656 161	+377 605
Karakalpakstan Resp.	12,449	19,019	24 101	28,837	+16 388
Andijan region	24 144	35,975	42,340	47,534	+23 390
Bukhara region	15,836	26 264	32 318	37,608	+21 772
Jizzakh region	11,887	18,737	24,331	28,973	+17 086
Kashkadarya region	16,906	26 274	39 220	43 184	+26 278
Navoi region	9 224	19,155	24 108	27 153	+17 929
Namangan region	18,058	27,467	33,785	38,005	+19 947
Samarkand region	20,794	35,236	51,248	56 562	+35 768
Surkhandarya region	11,776	22,804	29,045	34,359	+22 583
Syrdarya region	9,038	14,358	16,316	19,232	+10 194
Tashkent region	29,688	46 274	54,325	63,918	+34 230
Fergana region	23,694	37,420	49,302	57,388	+33 694
Khorezm region	12,652	20,284	27,647	35 174	+22 522
Tashkent city	62,410	90,935	111,776	138 234	+75 824

According to the analysis of the table data, the number of registered business entities in the republic increased by more than 377 thousand units between 2018 and 2024. The greatest growth was observed in Tashkent city, Samarkand and Fergana regions, where a sharp increase in activity in the service, industrial and trade sectors is clearly visible. This confirms that the central regions have not only a high demographic, but also a high economic potential.

On the other hand, the growth of business entities in the Republic of Karakalpakstan and some regions is relatively slower, which indicates the need to improve the economic environment and increase investment attractiveness in these regions. Also, the overall indicators indicate that the share of small businesses in the country's economy is increasing, playing an important role in ensuring regional economic stability. Therefore, state policy should be aimed at the balanced development of entrepreneurship across regions.

Entrepreneurship in Uzbekistan has been developing significantly in recent years as a result of government support, tax incentives, the expansion of the «single window» system, and the introduction of digital services (Table 2).

¹ Created by the author based on data from the siat.stat.uz portal

Table 2. Number of operating businesses²

Regions	2018	2020	2022	2024	Difference 2024/2018
Uzbekistan Rep.	265,016	414 186	527 222	361,793	+96 777
Karakalpakstan Resp.	12,058	18,378	22,955	17,248	+5 190
Andijan region	22,692	31,829	39 190	20 101	-2 591
Bukhara region	14,934	24,971	30 238	22,775	+7 841
Jizzakh region	11,239	17,799	22,551	13,612	+2 373
Kashkadarya region	16,361	25,469	36,639	22,605	+6 244
Navoi region	9 181	18,022	22,951	16,252	+7 071
Namangan region	17,075	26,670	32,476	19,714	+2 639
Samarkand region	19,750	33,321	48 155	31,669	+11 919
Surkhandarya region	11,705	21,680	27,470	19 184	+7 479
Syrdarya region	8 363	13,417	15 103	8,706	+343
Tashkent region	25,669	40,527	49,488	34,739	+9 070
Fergana region	23,446	36,327	46,601	28 291	+4 845
Khorezm region	11,887	18,978	25,751	20,654	+8 767
Tashkent city	60,656	86,798	107,654	86,243	+25 587

This process is also clearly reflected in the steady growth in the number of business entities operating in the regions, contributing to the diversification of the local economy and the creation of new jobs. According to the analysis of the table data, the number of business entities operating in the period from 2018 to 2024 increased by more than 96 thousand entities, from 265 thousand to 361 thousand. This growth was particularly high in Tashkent city, Samarkand, Tashkent region and Fergana regions. In particular, the registration of more than 25 thousand additional entities in Tashkent city demonstrates the leading position and investment attractiveness of the country's capital in business activity.

However, in some regions, in particular, in Andijan region, the number of operating businesses has decreased from 2018 to 2024. This situation indicates differences in regional economic development and the need for additional incentive measures and economic policies adapted to local conditions. In general, the growth of active businesses is an important factor in the sustainable development of the country's economy, allowing for the efficient use of economic resources across regions, increasing employment, and forming a competitive economic system.

The indices of the share of small business and private entrepreneurship in GDP by region are important indicators for assessing economic activity. The table below presents the general situation in the Republic of Uzbekistan and the dynamics of the share of small business in the economy by region for 2018-2024. An increase in the index values indicates an increase in the contribution of small business to GDP in the regions, while a decrease indicates a slowdown in economic activity (Table 3).

Table 3. The share of small businesses and private entrepreneurship in GDP³

Regions	2018	2020	2022	2024	Difference 2024/2018
Uzbekistan Rep.	100	100	100	100	-
Karakalpakstan Resp.	98.9	108.4	112.8	121.2	+22.3
Andijan region	116.8	126.4	127.3	128.0	+11.2
Bukhara region	126.8	133.2	135.7	134.4	+7.7
Jizzakh region	135.5	146.3	144.0	137.2	+1.7
Kashkadarya region	114.9	128.9	128.4	130.8	+15.8
Navoi region	69.8	48.4	51.1	46.2	-23.6
Namangan region	127.5	132.7	136.6	135.2	+7.6

² Created by the author based on data from the siat.stat.uz portal

³ Created by the author based on data from the siat.stat.uz portal

Samarkand region	126.9	130.4	129.7	133.2	+6.2
Surkhandarya region	127.2	135.7	142.3	143.3	+16.1
Syrdarya region	124.1	127.0	124.0	125.6	+1.5
Tashkent region	94.6	90.4	90.5	99.3	+4.7
Fergana region	114.5	127.5	131.1	134.8	+20.4
Khorezm region	124.7	134.6	131.7	133.2	+8.4
Tashkent city	104.2	93.2	94.1	96.5	-7.7

According to the data, the share of small businesses in GDP between 2018 and 2024 showed a relatively stable growth trend. In particular, the economic activity of small businesses has increased significantly in the Republic of Karakalpakstan (+22.3), Fergana (+20.4) and Surkhandarya (+16.1) regions. These regions have seen an increase in investment flows and the expansion of small business activities in the service and manufacturing sectors. A positive growth trend has also been recorded in Namangan, Andijan and Kashkadarya regions, and the increase in the share of small businesses in GDP in these regions indicates the acceleration of economic diversification processes. In general, the data in the table show that there are significant differences in the development of small businesses by region, emphasizing the need for a differentiated approach to regional economic policy.

The formation of a strategy for sustainable regional development across the economic regions of Uzbekistan requires a differentiated approach based on the specialization, resource potential, and institutional characteristics of each region. The table below summarizes specialization, development factors, limiting factors, and priority areas of sustainable development by economic region (Table 4).

Table 4. Main directions of the sustainable development strategy for economic regions of Uzbekistan⁴

Economic district	Territories within the economic region	Main areas of specialization	Regional development factors	Main factors limiting development	Sustainable development priorities
Fergana	Andijan	Agriculture, processing, labor-intensive industry	High population density, domestic market potential	Limited land and water resources, employment pressure	Agro-industrial clusters, deepening value chains, export orientation
	Namangan				
	Fergana				
Tashkent	Tashkent city	Industry, logistics, services, agro-industry, IT	High GRP and industrial indices, agglomeration effect, concentration of investment and infrastructure	Excessive centralization, internal imbalances between regions, migration pressure, environmental burden	Smart specialization (SI, fintech), agglomeration management, logistics clusters, green city model
	Tashkent				
	Jizzakh				
	Syrdarya				
Central	Samarkand	Mining, energy, tourism, industry	Investment and industry are unevenly distributed (Navoi leader)	Dependence on raw material exports, regional imbalances	Diversification, processing industry, industrial-services integration
	Bukhara				
	Navoi				
South	Kashkadarya	Agriculture, energy, cross-border trade	Resource potential exists, infrastructure is weak	Low technological level, logistical constraints	Frontier economic zones, energy-based industrialization
	Surkhandarya				
North	Karakalpakstan Resp.	Irrigated agriculture, food, processing	Green economy, renewable energy and agro-innovation potential	Aral Sea crisis, limited water resources, migration, low investment	Green economy, social infrastructure, compensation policy
	Khorezm				

In this context, a differentiated approach across economic regions is important in improving the mechanisms for implementing a sustainable development strategy. Because the economic specialization, level of infrastructure, investment activity, demographic pressure, and business environment of the regions are not the same. Therefore, the digital services system should be managed in an integrated manner with priority

4 Formed by the author

sectors across economic regions. For example, it is necessary to develop digital management packages coordinated with the directions of agglomeration management and high-tech services in the Tashkent economic region, agro-industrial chains in the Fergana region, industrial diversification in the Central region, cross-border logistics and energy in the Southern region, and environmental sustainability and social infrastructure in the Northern region.

This table systematically summarizes the main directions of the sustainable development strategy across the economic regions of Uzbekistan. The specialization, dominant features and existing socio-economic problems of each economic region are assessed based on the natural, economic and demographic potential of the regions. There are differences in development between regions, and to reduce them, not a single standard approach, but differential strategies adapted to the specific characteristics of the region are needed.

The results presented in the table confirm that a regionally appropriate and differentiated approach is a priority in formulating a sustainable development strategy for economic regions. In particular, due to the high agglomeration effect, investment and infrastructure concentration in the Tashkent economic region, strategic attention should be paid to improving management efficiency, optimizing the transport and logistics system, and deepening smart specialization in areas that create high added value. In the Fergana economic region, the expansion of agro-industrial clusters and value chains is crucial for stabilizing employment in the face of demographic pressure and resource constraints. In the Central Economic Region, the risks of dependence on the raw material sector and territorial imbalances are mitigated through diversification, expansion of processing, and strengthening industry-services integration.

In the Southern Economic Region, the priority will be given to the development of border economic zones and energy-based industrialization mechanisms that exploit the potential of cross-border trade in the conditions of logistical constraints and low technological level. In the Northern Economic Region, the ecological crisis and limited water resources require a “green” model of sustainable development, that is, a policy focused on renewable energy, water-saving agro-innovations and social infrastructure is a prerequisite for restoring regional stability. In general, the table scientifically substantiates that the strategy for reducing interregional disparities should be developed not as a single set of instruments, but on the basis of a package of targeted measures selected in accordance with the chain of specialization-factors-constraints. This approach allows for the scientific formulation of a regional sustainable development strategy.

CONCLUSION AND SUGGESTIONS

The results of the study showed that the effective formulation of a strategy for sustainable regional development is inextricably linked to the improvement of institutional mechanisms, which allows for the rational use of socio-economic potential across regions. In Uzbekistan, regional economic activity is increasing through improving the business environment, simplifying administrative processes, and strengthening institutional coordination. At the same time, significant differences in the number of business entities, the level of their activity, and the share of small businesses in GDP between regions indicate the need for a differentiated approach to regional policy. In particular, the rapid growth of economic activity in central and economically developed regions, while the low development rates in relatively remote regions indicate the persistence of the problem of regional imbalances.

Therefore, when developing a sustainable development strategy, a comprehensive assessment of factors such as regional specialization, resource base, demographic pressure, investment activity and business environment is of great importance. Improving management efficiency through improving institutional mechanisms, reducing interregional economic disparities, supporting small business and private entrepreneurship, and enhancing investment attractiveness are important conditions for sustainable economic growth. In general, the formation of a strategy for sustainable regional development based on a scientifically based differentiated approach serves to ensure long-term sustainable growth of the national economy, increase the competitiveness of regions, and strengthen socio-economic stability.

REFERENCES

1. World Bank. (2009). World Development Report 2009: Reshaping economic geography. Washington, DC: World Bank.
2. United Nations. (2015). Transforming our world: The 2030 Agenda for Sustainable Development. New York: United Nations.
3. Sachs, JD (2015). The age of sustainable development. New York: Columbia University Press.
4. OECD. (2019). OECD Regional Outlook 2019: Leveraging megatrends for cities and rural areas. Paris: OECD Publishing.
5. European Commission. (2017). My region, my Europe, our future: Seventh report on economic, social and territorial cohesion. Brussels: European Commission.
6. SIGMA. (2023). The principles of public administration. Paris: OECD & European Union.

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