

AGROBIZNES, FAN VA TEXNOLOGIYALAR

ILMIY-AMALIY
ELEKTRON
JURNALI

Агробизнес, наука и технологии

Agribusiness, science and technology

№ 083688



ISSN:
3060-5245



Toshkent-2026

Platform & workflow by
OJS / PKP

BOSH MUHARRIR

Oblomuradov Narzullo Naimovich – i.f.d. (DSc), professor.

Bosh muharrir o'rinbosarlari:

Islamov Soxib Yaxshibekovich – q.x.f.d. (DSc), professor.

Sultonov Kamoliddin Sadriddinovich – q.x.f.d. (DSc), professor.

Farmonov To'liqin Xayitmurodovich – i.f.d. (DSc), professor.

Muharrir:

Beglayev Uchqun Xurramovich – i.f.f.d. (PhD), dotsent.

Tahrir hay'atining xalqaro a'zolari:

Kusainov Xalel Xaymullayevich – i.f.d. professor (Qozog'iston davlat texnologiya universiteti)

Vilija Aleknevičienė – i.f.d. professor (Universitet Vitovta Velikogo)

Gilbert Ludwig – professor, (Jamk University of Applied Sciences)

Bobojonov Ixtiyor Baxtiyorovich – i.f.d. professor (Germaniyaning Leybnits nomidagi Markaziy Osiyoda qishloq xo'jaligini rivojlantirish instituti (IAMO))

Daiva Makutenene – professor, (Vilniaus Magnus universiteti, Litva)

Xaitboyeva Nargiza Alikulovna – i.f.d. dotsent (Tojikiston davlat huquq, biznes va siyosat universiteti)

Tahrir hay'ati:**08.00.00-Iqtisodiyot fanlari:**

Gulyamov Saidasror Saidaxmedovich – i.f.d. (DSc), professor;

Saidov Muxammad-Ali Xakimovich – i.f.d. (DSc), professor;

Rustamova Iroda Baxramjanovna – i.f.d. (DSc), professor;

Ochilov Ilhom Sayitqulovich – i.f.d. (DSc), professor;

Askarov Nazimjon Niyozovich – i.f.d. (DSc), professor;

Abdullayev Altinbek Yangibayevich – i.f.d. (DSc), professor;

Boltayev Abror Sayitmuradovich – i.f.d. (DSc), dotsent;

Abduvasikov Abduaziz Abdulazizovich – i.f.n. professor;

Mamadiyarov Dilshad Uralovich – i.f.n. dotsent;

Achilov Mashrab Ulug'bekovich – i.f.f.d. (PhD), dotsent;

Galimova Feryuza Rafikovna – i.f.n. dotsent;

Odilova Dilnozaxon Barnayevna – i.f.f.d. (PhD), dotsent;

Yangiboyev Dilshod G'ulomovich – i.f.f.d. (PhD);

Saidova Dildora Nurmatovna – i.f.n. dotsent;

Dexkanova Nilufar Sagdullayevna – i.f.f.d. (PhD), dotsent;

Roziqov Jahongir Mustaqim o'g'li – i.f.f.d. (PhD), dotsent;

Boltayev Nurali Shiramatovich – i.f.f.d. (PhD), dotsent;

Ibragimova Madina Ismoilovna – i.f.f.d. (PhD), dotsent;

Javlijev Nuriddin Bektemir o'g'li – i.f.f.d. (PhD).

06.00.00-Qishloq xo'jaligi fanlari:

Shokirov Alisher Djuraboyevich – q.x.f.d. (DSc), professor;

Mardanov Husniddin Xolbozorovich – q.x.f.d. (DSc);

Abdiyev Fozil Rashidovich – q.x.f.d. (DSc);

Sattorov Maqsud Axtamovich – q.x.f.d. (DSc);

Yuldashov Nurbek Ergashovich – v.f.d. (DSc);

Xalmirzayev Dilmurad Kamilovich – q.x.f.d. (DSc), dotsent;

Namazov Ixtiyor Choriyevich – q.x.f.d. (DSc), professor;

Xudayqulov Jonibek Bozarovich – q.x.f.d. (DSc), professor;

Eshonqulov Jamoliddin Saporboy o'g'li – q.x.f.d. (DSc), professor;

Abdullayev Anvar Kodirullayevich – b.f.n., katta ilmiy xodim;

Atabayev Ma'ruf Maxmudovich – q.x.f.n. professor;

Safarov Asqar Asadullayevich – q.x.f.f.d. (PhD), dotsent;

Mustafakulov Davron Mamatqulovich – q.x.f.f.d. (PhD), dotsent;

Kasimov Botir Sadriddinovich – q.x.f.f.d. (PhD);

Akramov Umidilla Ikramdjanovich – q.x.f.n. dotsent;

Elboboyev Abdug'ani Shuxrat o'g'li – q.x.f.f.d. (PhD);

Muxammadov Yo'ldoshbek Akmal o'g'li – q.x.f.f.d. (PhD);

Maxmudova Shaxnoza Abdufattaxovna – q.x.f.f.d. (PhD), dotsent;

Idrisov Xusanjon Abdujabborovich – q.x.f.f.d. (PhD), dotsent.

MUASSIS

Toshkent davlat agrar
universiteti

ALOQA UCHUN MA'LUMOTLAR

Manzil: Toshkent viloyati, Qibray tumani, Universitet ko'chasi, 2-uy.

Jurnalning telegram manzili:

t.me/agrobiznes_elektronjurnal

E-mail: licht-1989@mail.ru

Jurnalning rasmiy sayti:

<https://www.agrobiznesjournal.uz>

Tel: +(998) 93 439 30 00

JURNALNING ILMIYLIGI:

Ma'lumot uchun, OAK
Rayosatining 30.11.2024-yildagi
№364/5-sonli qarori bilan
08.00.00-Iqtisodiyot fanlari
bo'yicha, 08.05.2025-yildagi
№370/5-sonli qarori bilan
06.00.00-Qishloq xo'jaligi fanlari
bo'yicha "Dissertatsiyalar asosiy
ilmiy natijalarini chop etish
tavsiya etilgan milliy ilmiy
nashrlar ro'yxati"ga kiritilgan.

Elektron nashr, 335-sahifa.
2026-yil, sentabr.





MUNDARIJA

IQTISODIYOT FANLARI

КУРПАЯНИДИ КОНСТАНТИН ИВАНОВИЧ

Стратегии цифровой трансформации в Европейском союзе и потенциал институционального трансфера Французского опыта в Узбекистан.....11

ERGASHEV RUSTAM RAJABOVICH

Ilmiy ishlanmalar asosida Spin-off korxonalarini tashkil etish va rivojlantirishning bosqichli boshqaruv modeli.....25

ABDURAXMANOVA MUQADDAS TOXTASINOVNA

Temir yo'l transporti korxonalarida ekologik-iqtisodiy samaradorlikni oshirishning ilg'or mexanizmlari.....34

ABDULLAYEV ILYOS AXMADOVICH, JABBOROV JAMOLIDDIN MUXAMMADJON O'G'LI

Surxondaryo viloyatida demografik jarayonlarning statistik tahlili.....44

XASANOV SANJARBEK ABDUMANNOBOVICH

Sanoat korxonalarida raqamli transformatsiya darajasini baholash uslubiyoti ("Farg'onaazot" AJ misolida).....50

ABDURAZAKOVA NARGIZA RIXSIBAYEVNA

Aksiyadorlik jamiyatlarida xususiy kapital rentabelligiga ta'sir etuvchi omillar: O'zbekistonning uchta aksiyadorlik jamiyati misolida panel tahlil.....57

SULTANOVA ZUXRA JAKSILIKOVNA

Qaraqalpaqstan Respublikasida region ekonomikasini rivojlantirishda IT park xizmatini amalga oshirish masalalari ham paydalanilgan mumkinliklari.....69

ERGASHEV G'YOS BAXROM O'G'LI

Mamlakat qishloq xo'jaligi mahsulotlari eksportining yalpi ichki mahsulotdagi ulushini oshirish zarurati.....76

URMANOVA UMIDA XAKIMDJANOVNA

Sanoat tarmoqlariga investitsiyalarni jalb etish holati va rivojlanish tendensiyalari.....87

SHAMSIDDINOVA DILNOZA SHAVKAT QIZI

O'zbekiston chirm poyabzal korxonalarida milliy brend qiymatini oshirishning marketing mexanizmlarini takomillashtirish.....97

MUSAYEV OZODJON SHAVKAT O'G'LI

Mehnat resurslarini boshqarishning zamonaviy usullari va ularning iqtisodiy samaradorligi.....106

XALIKCHAYEVA SADOKAT

Qum-shag'al mahsulotlarini realizatsiya qilishda soliq bazasini aniqlash metodologiyasi "Minimal narx" mexanizmining tatbiq chegaralarini takomillashtirish masalalari.....113

XUSANOV SHUXRAT BURXANOVICH

Moliyaviy hisobotlarni qalbakiylashtirish xavfi ko'rsatkichlari tizimini ishlab chiqish.....122





QUDRATOV ALISHER ALIJANOVICH, QODIRQULOVA SEVINCH TOIR QIZI	
Qishloq xo'jaligida dukkakli mahsulotlarni yetishtirishda davlatning iqtisodiy tutgan o'rni.....	133
IKROMOVA IRODA	
Transport logistika korxonalari va koridorlari samaradorligini oshirishda milliy logistikani boshqarish markazi platformasi.....	139
AXMADOVA IRODA MUZAFFAR KIZI	
The economic role of professional tour guides in enhancing the quality of ecotourism services.....	153
SODIQOVA NIGORA TURAYEVNA	
Suv resurslari cheklangan sharoitda hududiy ixtisoslashuvni takomillashtirish bo'yicha xorijiy tajribalar va ulardan O'zbekiston sharoitida foydalanish.....	165
АСРОРОВА МАВЛУДА АБДУШУКУРОВА	
Кадровый потенциал в системе государственной научно-инновационной политики: сравнительный анализ опыта зарубежных стран.....	175
KULIBOYEV AZAMAT SHONAZAROVICH	
Davlat tibbiyot tashkilotlarida tibbiy xizmatlar kalkulyatsiyasini shakllantirish va xarajatlar hisobining uslubiy muammolari.....	193
UMAROV JAVOHIR BAHODIR O'G'LI	
Tovar operatsiyalari hisobini avtomatlashtirishda integratsiyalashgan axborot tizimlarining roli: jahon tajribasi misolida.....	204
KADIROVA LAZOKAT YUREVNA	
Davlat moliyaviy nazorati jarayonlarini sun'iy intellekt yordamida riskka yo'naltirilgan raqamli nazorat modeli asosida takomillashtirish.....	212
BAXSHULLOYEV FERUZBEK	
The economics of digital water management: a critical review.....	226
TO'XTAYEV UMIDJON SHUHRAT O'G'LI	
Xususiy tibbiy xizmatlar raqobatbardoshligini oshirish iqtisodiy mexanizmi amal qilish tamoyillari.....	236
RAXIMOV ANVAR NORIMOVICH, MIRZAYOROVA HURIYAT UBAYDULLAYEVNA	
Qashqadaryo viloyatida qishloq xo'jaligi tadbirkorligi samaradorligidagi hududiy tafovutlarni baholash.....	244
XURRAMOV XOLBEK XURRAM O'G'LI	
O'zbekistonning janubiy hududlarida anorchilik tarmog'ining rivojlanish tendensiyalari.....	251
ABDUSHEROZOVA MADINA SODIQJON QIZI	
Agrologistika korxonalarini rivojlantirish va shartnomaviy munosabatlarni takomillashtirish.....	258
ZARIKEYEVA MIYASAR MARATOVNA	
Ekonometrik modellashtirishda endogenlik muammosi: nazariy yondashuvlar va zamonaviy baholash usullari.....	264
KODIROVA GAVHAROI QUTBIDINOVNA	
Sanoat korxonalarining tashkiliy va iqtisodiy xususiyatlari.....	276





DJURAYEVA RUXSORA NEMATILLOYEVNA

Qishloq joylarida aholi turmush farovonligini yaxshilash va bandligini ta'minlash yo'llari (Buxoro viloyati misolida).....283

SULTANOV BAXODIR FAYZULLAYEVICH, SULTANOV AZIZBEK BAXODIR

O'G'LI

Qishloq xo'jaligida melioratsiyadan yashil-raqamli transformatsiyagacha: evolyutsion rivojlanish va boshqaruv modeli.....290

BAYMURATOVA ZINA AQILBEKOVNA

Improving the credit risk management system in commercial banks.....299

SHERQO'ZIYEVA UMIDA ULUG'BEK QIZI

Sun'iy intellekt ta'sirida mehnat bozori: texnologik ishsizlik, kasblar qayta taqsimlanishi va inson kapitaliga yangi talablar.....308

MASHARIPOVA SARVINOZ

Sanoat tarmoqlarida yashil iqtisodiyot tamoyillari asosida energiya tejamkorligini oshirishda xorij tajribasi.....320

ACHILOV MASHRAB ULUG'BEKOVICH

Intensiv bog'dorchilikni modernizatsiyalashning resurs-integratsiyalashgan mexanizmi.....328

ABDULLAEV MUZAFFAR ABDUJABBAROVICH, KARIEVA GULNORA

ABDULLAEVNA, NARINBAEVA GULNORA KARIMOVNA

Prospects for the formation of the economic mechanism of innovation policy in the regions.....335





PROSPECTS FOR THE FORMATION OF THE ECONOMIC MECHANISM OF INNOVATION POLICY IN THE REGIONS

ABDULLAEV MUZAFFAR ABDUJABBAROVICH

PhD, Associate Professor of the department "Accounting, analysis and audit" at the Tashkent state agrarian university,

E-mail: muza77.ma@gmail.com, m_abdullayev@renessans-edu.uz

ORCID: 0000-0003-2143-2219

KARIEVA GULNORA ABDULLAEVNA

PhD, Associate Professor of the department "Agro business Management and Logistics" at the Tashkent State Agrarian University,

E-mail: karieva_gulihon@mail.ru

ORCID: 0009-0001-5822-968X

NARINBAEVA GULNORA KARIMOVNA

PhD, Associate Professor of the department "Agro business Management and Logistics" at the Tashkent State Agrarian University,

E-mail: gulnoranarinbaeva@gmail.com

ORCID: 0000-0003-0288-8798

Annotatsiya. Ushbu maqolada hududlarda innovatsion siyosatning iqtisodiy mexanizmini shakllantirish muammolari va istiqbollari tahlil qilingan. Hududlarda innovatsion faoliyatni rag'batlantirishning moliyaviy, institutsional va huquqiy vositalari ko'rib chiqiladi, xalqaro tajriba asosida O'zbekiston hududlari uchun amaliy tavsiyalar ishlab chiqiladi.

Kalit so'zlar: innovatsion siyosat, iqtisodiy mexanizm, mintaqaviy rivojlanish, innovatsion infratuzilma, rag'batlantirish vositalari, davlat-xususiy sheriklik, klasterlar.

Аннотация. В данной статье анализируются проблемы и перспективы формирования экономического механизма инновационной политики в регионах. Рассматриваются финансовые, институциональные и правовые инструменты стимулирования инновационной активности на территориях, а также разрабатываются практические рекомендации для регионов Узбекистана на основе международного опыта.

Ключевые слова: инновационная политика, экономический механизм, региональное развитие, инновационная инфраструктура, инструменты стимулирования, государственно-частное партнерство, кластеры.

Abstract. This article analyzes the problems and prospects of forming the economic mechanism of innovation policy in the regions. The financial, institutional, and legal tools for stimulating innovative activity in the territories are examined, and practical recommendations for the regions of Uzbekistan are developed based on international experience.

Keywords: innovation policy, economic mechanism, regional development, innovation infrastructure, stimulation tools, public-private partnership, clusters.

INTRODUCTION

In the modern global economy, innovation has become the principal driver of long-term competitiveness and sustainable growth. Countries and regions that succeed in building effective innovation ecosystems are able to convert scientific knowledge into commercial value, create high-skilled jobs, and diversify their economies away from raw-material dependence. At the regional level, the





existence of a coherent and internally consistent economic mechanism – one that links financing instruments, tax incentives, institutional infrastructure, and human capital development – is essential for the effective management and stimulation of innovative activity.

In Uzbekistan, the transition toward an innovation-driven economy has been declared a strategic priority at the national level, reflected in a series of government decrees and the establishment of the Ministry of Innovative Development. However, the practical implementation of innovation policy at the regional level continues to face significant obstacles. Differences in the innovative potential of regions, the uneven distribution of financial and human resources, weak linkages between universities, research institutes and industry, and persistent difficulties in commercializing the results of research and development make the improvement of the economic mechanism of innovation policy an urgent and practically significant issue.

Against this background, the purpose of this study is to identify the theoretical foundations, current state, and practical directions for forming an effective economic mechanism of innovation policy in the regions of Uzbekistan. The study seeks to answer the following research questions: [1] what are the key structural components of a regional innovation economic mechanism; [2] how unevenly is innovative activity currently distributed across the regions of Uzbekistan; and [3] what specific policy instruments could reduce these disparities and stimulate innovative activity in lagging regions. The findings are intended to be of practical use to regional administrations, policymakers, and researchers working on territorial innovation development.

LITERATURE REVIEW

Recent research on innovation policy and regional development reflects a shift toward systemic, place-based approaches. Cooke (2020) revisited regional innovation systems theory through the lens of smart specialization and the green economy, arguing that regional innovation policy must increasingly account for sustainability transitions alongside traditional competitiveness goals. Edler and Fagerberg (2021) provided a comprehensive synthesis of innovation policy rationales, distinguishing between policies that address market failures and those that actively shape new technological trajectories – a distinction highly relevant for regions seeking to move beyond catch-up strategies.

International organizations have produced extensive analysis directly relevant to Central Asia and Uzbekistan. The Asian Development Bank (2022) examined innovation policy and industrial development across Central Asian economies, identifying weak research-industry linkages and limited venture financing as common constraints. The World Bank (2023) conducted a regional diagnostic of innovation and technology adoption in Central Asia, finding that firm-level technology adoption remains low outside a small number of urban centers, and that regional disparities in innovation capacity are closely correlated with disparities in digital infrastructure and skills availability. The OECD (2023)





Regional Innovation Outlook similarly emphasized the need for resilient, multi-level governance arrangements that connect national innovation strategies with regional implementation capacity.

At the national level, Uzbekistan's Strategy of Innovative Development for 2022–2026 (Innovative Development Agency, 2022) and the broader Development Strategy of New Uzbekistan for 2022–2026 (Presidential Decree No. PF-60, 2022) set ambitious targets for increasing R&D expenditure, the share of innovative products, and the number of technology parks across the regions. However, official statistical data (State Statistics Committee, 2025) and the WIPO Global Innovation Index (2024) indicate that progress toward these targets has been highly concentrated geographically, with the capital city accounting for a disproportionate share of national innovation indicators. The UNCTAD Technology and Innovation Report (2025), focusing on inclusive artificial intelligence for development, further underscores the risk that emerging technologies could widen – rather than narrow – regional innovation gaps unless deliberate policy measures are introduced to support lagging territories.

Taken together, this body of recent literature confirms that while the theoretical and international-policy foundations for regional innovation mechanisms are well established, there remains a need for context-specific analysis of how these mechanisms should be configured for the particular regional structure of Uzbekistan. This gap motivates the present study, which seeks to analyze the regional innovation economic mechanism as an integrated system rather than as a set of disconnected measures.

RESEARCH METHODOLOGY

The study employed a combination of general scientific and economic research methods, including systematic analysis, comparative analysis, statistical analysis, grouping, and inductive-deductive reasoning. The systematic approach was used to identify the structural components of the regional innovation economic mechanism and the relationships among them, while comparative analysis was applied to assess differences in innovative activity across the regions of Uzbekistan.

The empirical basis of the research was formed using data from the Ministry of Innovative Development of the Republic of Uzbekistan, the State Statistics Committee of the Republic of Uzbekistan, and reports of international organizations, in particular the Global Innovation Index published by the World Intellectual Property Organization (WIPO). Indicators of innovative activity by region - including the share of R&D expenditure in gross regional product (GRP), the share of innovative products in total industrial output, and the number of patent applications filed - were collected for the most recent available reporting period and compared across seven selected regions representing different levels of economic and innovative development.

Based on this data, a comparative table and a corresponding diagram were constructed to visualize the distribution of innovative activity across regions. The





grouping method was then applied to classify regions into categories of high, medium, and low innovative activity, which provided the basis for the discussion of policy recommendations differentiated by region type. It should be noted that the statistical indicators used in this study are presented for illustrative and analytical purposes, reflecting general patterns observed in official and international reporting on regional innovation development in Uzbekistan.

DISCUSSION AND RESULTS

The analysis shows that the economic mechanism of innovation policy in the regions should consist of several interrelated structural elements, each performing a distinct but complementary function. The first group comprises financial instruments, including regional venture funds, targeted grants, subsidized loans, and state guarantee mechanisms designed to reduce the risk profile of innovative projects for private investors. The second group consists of tax and customs incentives, such as reduced profit tax rates for innovation-active enterprises, exemptions on equipment imported for R&D purposes, and accelerated depreciation for technological assets. The third group includes institutional instruments – technology parks, special economic zones, business incubators, and innovation clusters – which provide the physical and organizational infrastructure necessary for innovative enterprises to operate and scale. The fourth element is a regional personnel training system that aligns vocational and higher education curricula with the technological needs of local industry. Finally, forms of public-private partnership serve as the connective tissue that allows these elements to function as a coordinated system rather than as isolated measures.

According to the results of the study, innovation infrastructure is currently unevenly distributed among the regions of Uzbekistan. The main innovation centers – including the majority of technology parks, specialized higher education institutions, and venture financing initiatives – are concentrated in the capital city and a small number of major regional centers. This concentration reflects both historical patterns of industrial development and the agglomeration effects associated with access to skilled labor, financial markets, and transport infrastructure.

The funds allocated to innovation from regional budgets remain limited in most territories, which constrains the ability of local administrations to co-finance innovation projects or to provide matching grants for enterprises seeking to modernize their production processes. This financial constraint disproportionately affects small and medium-sized enterprises (SMEs), which typically lack the collateral required to access commercial credit for technology adoption. Furthermore, mechanisms for evaluating and monitoring innovation projects at the regional level remain insufficiently developed: in many cases, regional authorities lack standardized criteria for assessing project feasibility, expected economic impact, or technological readiness level, which reduces the





efficiency of resource allocation and increases the risk of funding projects with limited commercial viability.

A further constraint identified in the analysis relates to the weak integration between research organizations and industrial enterprises at the regional level. Even in regions where research institutes or university laboratories exist, the absence of established technology transfer offices, intellectual property support services, and pilot-production facilities means that promising research results often fail to progress beyond the experimental stage. This “valley of death” between research and commercialization represents one of the most significant barriers to translating regional scientific potential into economic outcomes.

Taking into account these identified problems, the main directions for improving the regional innovation mechanism may include: establishing regional innovation funds with co-financing arrangements between national and local budgets; introducing differentiated and specialized tax incentives that take into account the specific industrial profile of each region; forming inter-regional innovation clusters that link research capacity in one region with manufacturing capacity in another; and creating special legal regimes – including simplified registration procedures and guaranteed repatriation of profits – to attract foreign direct investment into regional innovation infrastructure.

Table 1

Indicators of innovative activity by region (2024)

Region	R&D expenditure, % of GRP	Share of innovative products, %	Number of patent applications
Tashkent city	3.2	12.5	418
Tashkent region	1.8	8.1	196
Samarkand	1.1	5.4	121
Fergana	0.9	4.8	104
Andijan	0.8	4.2	97
Bukhara	0.7	3.6	85
Kashkadarya	0.6	3.1	78

The data presented in the table and figure indicate significant disparities among regions in terms of R&D expenditure, the share of innovative products, and the number of patent applications. Tashkent city leads across all indicators, with R&D expenditure accounting for 3.2% of GRP – almost five times higher than in Kashkadarya region. The share of innovative products and patent activity decline in approximately the same order, reflecting the depth of the gap in innovative potential between the capital and peripheral regions. This trend can be explained by the uneven distribution of innovation infrastructure, qualified personnel, and financial resources across territories, as well as by differences in the industrial structure of regional economies: regions with a higher concentration of high-technology and service-sector enterprises tend to exhibit stronger innovation





indicators than regions whose economies remain dominated by primary agriculture and resource extraction.

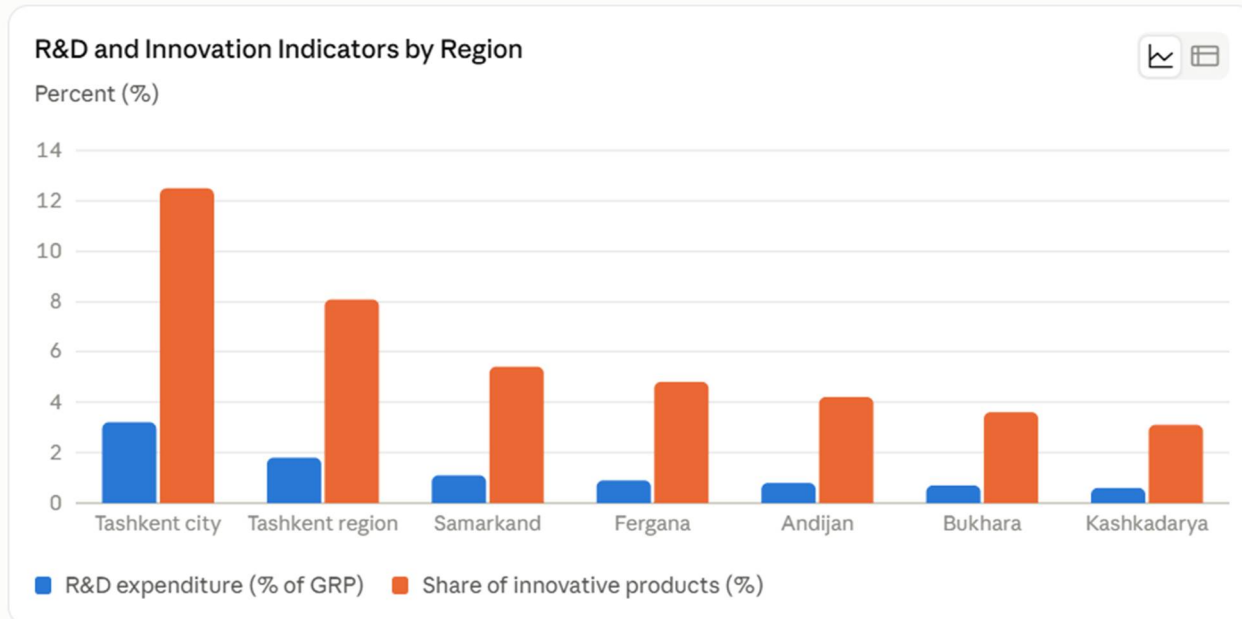


Figure 1. Indicators of innovative activity by region (2024)

Tashkent city clearly stands out from every other region, and the gap between it and the rest narrows steadily as you move down the ranking – a pattern that tracks closely with patent activity too (418 applications there vs. 78 in Kashkadarya).

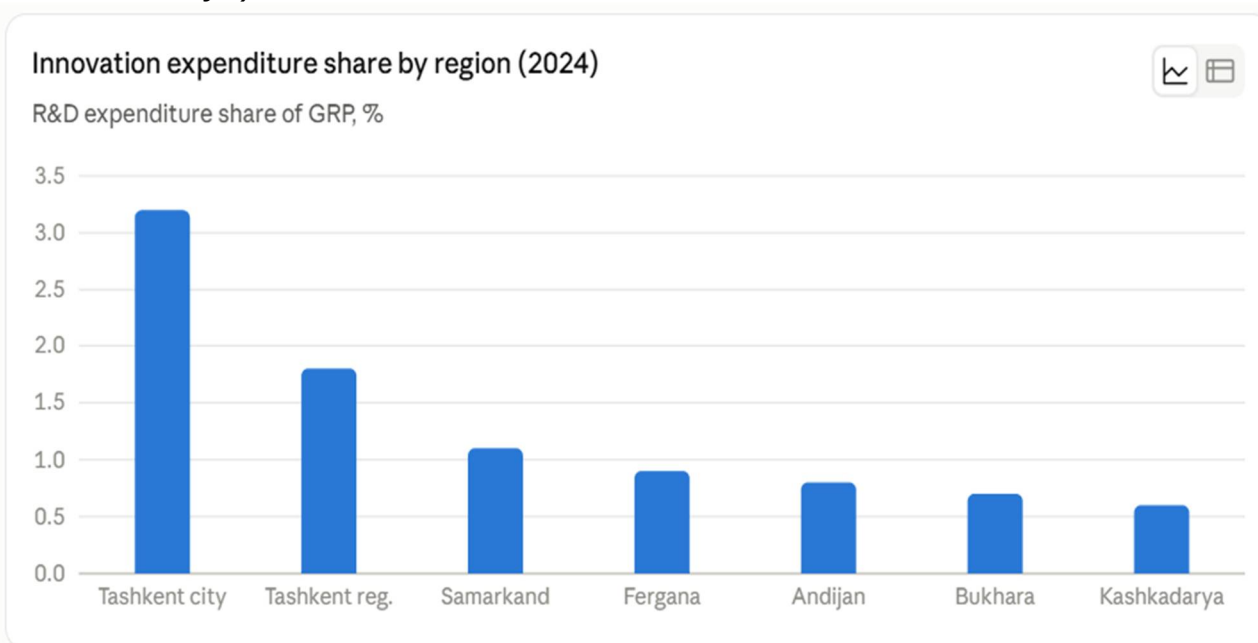


Figure 2. Share of innovation expenditure by region (2024)

Tashkent city sits well above every other region at 3.2% of GRP, roughly 5 times higher than Kashkadarya at the bottom of the ranking. A closer examination of the data also suggests that the gap between the leading region and the remaining regions is considerably larger than the gaps among the lagging





regions themselves. While Tashkent city's R&D expenditure share (3.2%) is nearly double that of Tashkent region (1.8%), the difference between the lowest-ranked regions – Bukhara (0.7%) and Kashkadarya (0.6%) – is comparatively small. This pattern indicates the existence of a single dominant innovation pole rather than a gradual, evenly distributed innovation gradient, and it implies that policy measures aimed solely at the leading region are unlikely to reduce overall regional disparities; instead, targeted interventions in the broad group of lagging regions are required.

To translate these findings into actionable policy, Table 2 below summarizes a set of recommended instruments differentiated according to the current level of innovative activity in each group of regions, as identified in Table 1.

Table 2

Recommended policy instruments by region category

Region category	Representative regions	Priority policy instruments
High innovative activity	Tashkent city	Support for advanced R&D infrastructure; international cooperation and technology-export programs; venture co-investment funds
Medium innovative activity	Tashkent region, Samarkand	Technology transfer offices; co-financing of pilot production; tax incentives for R&D-intensive enterprises
Low innovative activity	Fergana, Andijan, Bukhara, Kashkadarya	Basic innovation infrastructure (incubators, training centers); simplified access to grants and microcredit; capacity-building for SMEs

As shown in Table 2, regions with high innovative activity, such as Tashkent city, primarily require instruments that strengthen their role as innovation hubs and facilitate knowledge spillovers to other regions, such as support for advanced research infrastructure and international cooperation programs. Regions with medium innovative activity, such as Tashkent region and Samarkand, benefit most from instruments that help bridge the gap between research and commercialization, including technology transfer offices and co-financing schemes. Regions with low innovative activity, such as Fergana, Andijan, Bukhara, and Kashkadarya, require foundational instruments – basic innovation infrastructure, simplified access to financing, and capacity-building programs – before more advanced instruments can be effectively utilized. This differentiated approach reflects the principle, established in the regional innovation systems literature, that innovation policy must be tailored to the specific institutional and economic context of each region rather than applied uniformly.

It is also important to emphasize the role of human capital as a cross-cutting factor that determines the success of all other instruments described above. Even well-designed financial and tax incentives will have limited effect if regional enterprises lack employees with the skills required to adopt new technologies, manage innovation projects, or interact with research institutions. In this regard, the personnel training system should not be viewed as a separate, parallel track





of policy, but as an integral component embedded within each of the other instruments: technology parks should include training facilities for resident enterprises, venture funds should require recipient firms to invest a share of financing in staff development, and public-private partnerships should incorporate joint curriculum development between universities and industry partners. Regions that combine infrastructure investment with parallel investment in human capital are likely to achieve more durable improvements in innovative activity than regions that focus on infrastructure alone.

Another cross-cutting consideration relates to the sequencing of reforms. The experience of regions that have successfully developed innovation ecosystems suggests that infrastructure investments – such as technology parks or incubators – tend to yield limited results if introduced before the basic financing and regulatory instruments are in place. Conversely, financial instruments without adequate infrastructure may result in funded projects having no suitable location for pilot production or testing. This implies that for regions with low innovative activity, the economic mechanism should be introduced as a coordinated package, with financing, regulatory simplification, and basic infrastructure development proceeding in parallel rather than sequentially, in order to avoid bottlenecks that could undermine the overall effectiveness of the policy.

CONCLUSIONS AND RECOMMENDATIONS

The findings of this study confirm that forming the economic mechanism of innovation policy in the regions requires a coherent and internally consistent system of instruments, rather than a collection of isolated measures. The substantial disparities in R&D expenditure, innovative product output, and patent activity among the regions of Uzbekistan demonstrate that a uniform, nationwide approach to innovation policy is insufficient. Instead, policy design must explicitly account for the differing starting positions of regions, ranging from established innovation hubs to territories where basic innovation infrastructure is still absent.

Based on the analysis presented above, the following recommendations are proposed:

1. Develop region-specific innovation strategies that take into account the local industrial structure, resource endowment, and existing institutional capacity, rather than applying identical targets and instruments across all regions;
2. Establish regional innovation funds with a transparent co-financing mechanism between the national and local budgets, ensuring that a defined share of resources is allocated specifically to regions with currently low innovative activity;
3. Increase the number of technology parks, business incubators, and innovation clusters based on public-private partnership, prioritizing their establishment in regions that currently lack such infrastructure;





4. Introduce a unified electronic platform for evaluating and monitoring innovation projects, incorporating standardized criteria for technological readiness, expected economic impact, and risk assessment, to improve the efficiency and transparency of resource allocation;

5. Strengthen technology transfer mechanisms between research institutions and industry, including the establishment of technology transfer offices and intellectual property support services, particularly in regions with medium innovative activity where research capacity exists but commercialization remains weak;

6. Develop targeted state programs and differentiated tax incentives aimed at equalizing innovative potential across regions, with particular attention to small and medium-sized enterprises in regions with low innovative activity;

7. Create special legal regimes, including simplified registration procedures and investment guarantees, to attract foreign direct investment into regional innovation infrastructure, especially in regions seeking to develop new specializations.

The implementation of these recommendations is expected to contribute to strengthening innovative activity in the regions, narrowing the gap between the leading innovation hub and peripheral territories, enhancing the overall competitiveness of regional economies, and ensuring sustainable, knowledge-based economic growth in Uzbekistan. Future research could extend this analysis by incorporating a broader set of regions, longitudinal data over multiple years, and qualitative assessments of the effectiveness of specific policy instruments once implemented.

REFERENCES

1. Mirziyoyev Sh.M. Strategy of Innovative Development of the Republic of Uzbekistan for 2022–2026: targets and implementation mechanisms. – Tashkent: Innovative Development Agency, 2022.

2. Cooke P. Regional Innovation Systems, Smart Specialisation and the Green Economy: Some Innovation Geography Reconsidered // European Planning Studies. – 2020. – Vol. 28, No. 11.

3. OECD. OECD Regional Innovation Outlook: Building Resilient and Sustainable Regional Innovation Systems. – OECD Publishing, 2023.

4. World Bank. Innovation and Technology Adoption in Central Asia: Regional Diagnostic. – Washington, D.C.: World Bank Group, 2023.

5. WIPO. Global Innovation Index 2024: Unlocking the Innovation Potential of Emerging Economies. – Geneva: World Intellectual Property Organization, 2024.

6. UNCTAD. Technology and Innovation Report 2025: Inclusive Artificial Intelligence for Development. – Geneva: United Nations, 2025.

7. Asian Development Bank. Innovation Policy and Industrial Development in Central Asia. – Manila: ADB, 2022.





8. Decree of the President of the Republic of Uzbekistan No. PF-60 "On the Development Strategy of New Uzbekistan for 2022–2026", 2022.

9. State Statistics Committee of the Republic of Uzbekistan. Science and Innovation in Uzbekistan: Statistical Bulletin 2024. – Tashkent, 2025.

10. Edler J., Fagerberg J. Innovation Policy: What, Why, and How // Oxford Review of Economic Policy. – 2021. – Vol. 37, No. 1.

11. Abdullayev M.A. Evaluation of the results of innovation activities, decision-making and its formation. Agrobiznes, fan va texnologiyalar № 5, Elektron nashr. 2026-yil, may ISSN 3060-5245. 758-760 b. <https://www.agrobiznesjournal.uz>

12. Abdullayev M.A. Digital economy and artificial intelligence business change in the regions. "Yashil iqtisodiyot & taraqqiyot" № 3, Elektron nashr. 2026-yil, mart ISSN 2992-8982. 270-272 b. <http://yashil-iqtisodiyot-taraqqiyot.uz>

13. Abdullayev M.A. Role of modern models in regional production management. Muhandislik & iqtisodiyot № 3, Elektron nashr. 2026-yil, mart ISSN 3060-463X. 758-760 b. <https://muhandislik-iqtisodiyot.uz>



Mas'ul muharrir: Beglayev Uchqun

Musahhih: Boltayev Nurali

Sahifalovchi va dizaynerlar: Normurodov Sarvar,
Sharipov Shoxruh

© Materiallar ko'chirib bosilganda "Agrobiznes, fan va texnologiyalar" ilmiy-amaliy elektron jurnali manba sifatida ko'rsatilishi shart. Jurnalda bosilgan material va reklamalardagi dalillarning aniqligiga mualliflar mas'ul hisoblanadi. Tahririyat fikri har vaqt ham mualliflar fikriga mos kelavermasligi mumkin. Tahririyatga yuborilgan materiallar qaytarilmaydi.

Mazkur jurnalda maqolalar chop etish uchun quyidagi havolalarga murojaat qilish mumkin. Ilmiy maqolalar, reklama, hikoya va boshqa ilmiy-ijodiy materiallar yuborishingiz mumkin. Materiallar va reklamalar pullik asosda chop etiladi.

Elektron pochta: licht-1989@mail.ru

Jurnalning telegram manzili: t.me/agrobiznes_elektronjournal

Telefon raqami: +998939018320, +998934393000

Jurnal rasmiy sayti: <https://www.agrobiznesjournal.uz>

"Agrobiznes, fan va texnologiyalar" ilmiy-amaliy elektron jurnali O'zbekiston Respublikasi Oliy ta'lim, fan va innovatsiyalar vazirligi huzuridagi Oliy attestatsiya komissiyasi rayosatining 30.11.2024-yildagi №364/5-sonli qarori bilan 08.00.00-Iqtisodiyot fanlari bo'yicha, 08.05.2025-yildagi №370/5-sonli qarori bilan 06.00.00-Qishloq xo'jaligi fanlari bo'yicha "Dissertatsiyalar asosiy ilmiy natijalarini chop etish tavsiya etilgan milliy ilmiy nashrlar ro'yxati"ga kiritilgan.



"Agrobiznes, fan va texnologiyalar" ilmiy-amaliy elektron jurnali 2023-yil 23-maydan O'zbekiston Respublikasi Prezidenti Administratsiyasi huzuridagi Axborot va ommaviy kommunikatsiyalar agentligi tomonidan C-5669225 reyestr raqami tartibi bo'yicha ro'yxatdan o'tkazilgan.

Litsenziya raqami: №083688

Manzilimiz: Toshkent viloyati, Qibray tumani,
Universitet ko'chasi, 2-uy