

STRUCTURAL CHANGES IN THE LEADING SECTOR CONFIGURATIONS OF BUKHARA REGION AND THEIR ASSESSMENT

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ANNOTATION

This article examines the structural transformations occurring in the key economic sectors of Bukhara Region, Uzbekistan, over the period 2017–2026. By analysing primary data from the State Statistics Committee of Uzbekistan, reports from the Asian Development Bank (ADB), the World Bank, and government decrees, the study traces the region's transition from an agriculture-dominated economy towards a diversified industrial, energy, and service-oriented structure. The analysis evaluates changes in sectoral contribution to gross regional product (GRP), investment inflows, employment patterns, and export performance. Special attention is given to the emergence of renewable energy as a new pillar of structural development, the expansion of textile and light manufacturing, the revival of tourism as a high-value service sector, and the declining relative weight of traditional oil and gas extraction. The paper applies descriptive-analytical and comparative methods to assess the depth, pace, and sustainability of structural shifts, concluding that Bukhara Region is undergoing a significant but incomplete structural transition that requires coherent policy coordination, upgraded human capital, and improved investment governance to achieve long-term development objectives.

KEYWORDS: Bukhara Region; structural transformation; sectoral analysis; renewable energy; industrial diversification; tourism development; Uzbekistan; regional economics; gross regional product; investment policy

1. INTRODUCTION

Bukhara Region, located in the southwestern part of Uzbekistan, has historically been one of the country's most strategically significant territories. Endowed with substantial natural resource wealth — including significant deposits of natural gas, petroleum, graphite, bentonite, marble, and sulphur — the region's economic profile has long reflected an extractive and agrarian character inherited from the Soviet period. The capital city of Bukhara, a UNESCO World Heritage Site and a celebrated node on the ancient Silk Road, adds a dimension of cultural and touristic capital that is only now being systematically monetised within national development strategies.

Since the political transition following the election of President Shavkat Mirziyoyev in 2016, Uzbekistan has embarked on an ambitious programme of market-oriented reforms encompassing foreign exchange liberalisation, privatisation of state-owned enterprises, incentive-based attraction of foreign direct investment (FDI), and sectoral diversification. Bukhara Region has been positioned as a testbed and beneficiary of many of these reforms, experiencing investment inflows, institutional restructuring, and new patterns of sectoral activity that represent a marked departure from the preceding three decades.

The question of how structural changes should be defined, measured, and evaluated at the sub-national level remains theoretically and methodologically contested in the regional economics literature. Structural change — understood as a systematic reallocation of productive resources across sectors — can be assessed through shifts in value-added composition, employment distribution, trade patterns, and capital formation (Szirmai, Naudé, and Alcorta, 2021). Applied to

Bukhara Region, these frameworks reveal a mosaic of rapid change in some areas and institutional inertia in others.

This article aims to provide a systematic assessment of structural changes in Bukhara Region's leading sectors over the period 2017–2026, drawing on official statistical data, international development institution reports, and peer-reviewed research. The paper is structured as follows: Section 2 reviews the methodology; Section 3 presents the region's economic baseline; Section 4 analyses transformations within each key sector; Section 5 provides an integrated assessment; and Section 6 offers conclusions and policy recommendations.

2. METHODOLOGY AND DATA SOURCES

This study employs a descriptive-analytical and comparative methodology. The analysis of structural change draws on the concept of sectoral share dynamics within gross regional product (GRP), as well as changes in investment flows, employment absorption, and export performance across sectors. Sectoral contributions are compared across two benchmark years — 2017 (pre-reform baseline) and 2024 — supplemented by trend data where available.

The primary data sources include: (i) the State Statistics Committee of the Republic of Uzbekistan (Stat.uz), which provides industrial production, GRP, employment, and investment data at the regional level; (ii) the Asian Development Bank's Country Economic Reports and project documentation for Uzbekistan; (iii) the World Bank's Country Economic Memorandum (2025); (iv) the International Monetary Fund's Regional Economic Outlook for the Middle East and Central Asia (2023); (v) the Cabinet of Ministers Resolution No. 543 (2022) on the development of the tourism sector in Bukhara Region 2022–2026; and (vi) peer-reviewed articles published in indexed journals, including the Central Asian Journal of Innovations on Tourism Management and Finance.

It should be acknowledged that sub-national statistical data in Uzbekistan, while substantially improved since 2017, still present limitations in comparability across years due to methodological revisions in national accounts. Where precise regional data are unavailable, national-level trends are used as contextual proxies, clearly indicated as such in the analysis.

3. ECONOMIC BASELINE OF BUKHARA REGION

3.1. Regional Profile

Bukhara Region covers an area of 40,216 km², with a population estimated at approximately 1.98 million as of 2022, of which 63% reside in rural areas. The region is administratively divided into 11 districts and two district-level cities — Bukhara and Kogon. The regional economy has historically been structured around four pillars: oil refining and gas processing; cotton ginning and textile manufacturing; agriculture (cotton, wheat, karakul sheep breeding); and, to a lesser extent, artisanal crafts and trade.

As recently as 2017, prior to the liberalisation reforms, Bukhara's economy was primarily associated with agriculture and resource extraction. Over the subsequent seven years, more than USD 4 billion in investment was attracted to the region, enabling the diversification of the economic base into energy, electrical engineering, chemical production, pharmaceuticals, and textile and leather manufacturing (Government of Uzbekistan, 2024). This shift has been accompanied by a substantial increase in the number of foreign tourists visiting the region — reaching 1.5 million annually in recent years.

3.2. Sectoral Structure: Pre-Reform and Post-Reform Overview

The table below presents an approximate sectoral composition of Bukhara Region's economic activity, based on available data and national-level trends reported by the State Statistics Committee:

Sector	Approx.	Approx.	Key Change Driver
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	Share of GRP (2017)	Share of GRP (2024)	
Oil & Gas Extraction / Refining	~30–35%	~20–25%	Relative decline; domestic processing priority
Agriculture (incl. cotton)	~25–28%	~18–20%	Liberalisation; shift to horticulture
Textile & Light Manufacturing	~8–10%	~15–18%	FDI; export-oriented strategy
Construction & Real Estate	~7–9%	~10–12%	Infrastructure investment
Tourism & Hospitality Services	~3–4%	~7–9%	Silk Road branding; arrivals recovery
Renewable Energy	< 1%	~3–5%	Large-scale wind projects (Bash 1 & 2)
Other Industry / Services	~12–15%	~15–18%	Pharmaceuticals; ICT; logistics

Source: Compiled by author based on Stat.uz data; Government of Uzbekistan (2024); ADB (2023, 2025, 2026); Hakimovich (2026).

These figures indicate that while hydrocarbon extraction and agriculture have retained absolute importance, their relative contribution to regional GRP has declined as new sectors have expanded. This pattern is consistent with the structural transformation hypothesis, which holds that economic development is characterised by resource reallocation from low-productivity primary activities toward higher-productivity manufacturing and services (Szirmai et al., 2021).

4. STRUCTURAL CHANGES IN LEADING SECTORS

4.1. Oil and Gas Sector: From Dominance to Managed Decline

The oil and gas sector has historically been central to Bukhara Region's economy. The region hosts significant petroleum and natural gas reserves, and the Bukhara Oil Refinery has long served as a cornerstone industrial facility. However, national policy under the Mirziyoyev administration has progressively shifted away from raw hydrocarbon export towards domestic value-added processing. Traditional export products such as gas and cotton are now increasingly retained for domestic processing, replacing a prior regime of raw commodity export (Economy of Uzbekistan, Wikipedia, 2025).

The oil and gas sector at the national level remains strategically important: Uzbekistan is the second-largest natural gas producer in Central Asia, and projects in the oil and gas industry are intended to attract approximately USD 36.5 billion in investment between 2019 and 2030 (ITA, 2025). Within Bukhara Region specifically, the sector continues to provide substantial fiscal revenues and industrial employment. However, its relative weight within the regional economic structure has diminished as other sectors have grown at faster rates. The structural shift is thus one of proportional decline within an expanding economy rather than absolute contraction.

The government's stated objective — articulated in the 2024 Year of Efficiency and Cost Reduction in Economy declaration — is to increase the value-added content of industrial output, which in 2023 did not exceed 40% of gross output value due to high energy intensity and import

dependence (Embassy of Uzbekistan, 2024). Addressing this structural inefficiency requires investment in downstream processing capacity in both oil refining and gas-based petrochemicals, areas where Bukhara Region holds comparative advantages.

4.2. Textile and Light Manufacturing: Emergence as a Structural Leader

One of the most pronounced structural changes in Bukhara Region over the review period has been the expansion of textile and light manufacturing. Nationally, textile export revenues have roughly doubled to nearly USD 3 billion, reflecting a strategic reorientation of cotton from raw fibre export to domestic value-added processing (Economy of Uzbekistan, Wikipedia, 2025). Bukhara Region, historically a significant producer of cotton with output of approximately 310,800 tonnes annually, has been directly integrated into this transformation.

Investment in textile cluster development — including yarn, knitted and woven fabric, ready-made garments, bed linen, and decorative textiles — has been incentivised through special economic zone mechanisms. As part of broader economic zone reform, 240 hectares of land in Bukhara's special industrial zones have been designated for outsourcing to foreign companies, with the expectation of implementing 309 major projects and creating 40,000 jobs (Embassy of Uzbekistan, 2024). The silk industry — a traditional strength of the region, with raw silk production capacity of approximately 370 tonnes per annum — has also been targeted for export revenue enhancement.

The evaluation of this structural change must account for both its achievements and its vulnerabilities. On the positive side, textile manufacturing offers higher employment intensity and value-added ratios than primary cotton cultivation. On the other hand, the sector's competitiveness remains constrained by energy costs, logistics infrastructure limitations, and a skills gap in quality management and international standards compliance — challenges that are not unique to Bukhara Region but are acutely felt there.

4.3. Tourism and Cultural Heritage Economy: Recovery and Repositioning

Bukhara City's status as a UNESCO World Heritage Site — celebrated as a 'living museum' and key node on the reconstructed Silk Road tourist corridor — provides the region with a heritage tourism asset of rare global significance. The COVID-19 pandemic caused a severe contraction: nationally, international tourist arrivals fell from a pre-pandemic peak of 6.75 million in 2019 to 1.50 million in 2020 (TourCentralAsia, 2025). Bukhara and Samarkand saw particularly significant reductions during this period.

The recovery trajectory has been strong. Nationally, foreign tourist arrivals rose to 6.63 million in 2023 and reached 7.96 million in 2024, a year-on-year increase of 20.1%, with a government target of attracting 11 million tourists in 2025 (ITA, 2025). For Bukhara Region specifically, 1.5 million foreign tourists visited in the twelve months preceding November 2024 (Government of Uzbekistan, 2024). The Cabinet of Ministers Resolution No. 543 (September 2022) establishes a comprehensive 2022–2026 tourism development programme for the region, with a target of attracting 6 million tourists by 2026 and generating USD 300 million in tourism export revenues (Central Asian Journal of Innovations on Tourism Management and Finance, 2026).

Government incentives for hotel construction of international class in Bukhara, Samarkand, and Khiva, along with improved transport connectivity, are expanding the accommodation and hospitality infrastructure. However, structural challenges persist: in 2022, Uzbekistan had only three five-star hotels nationwide (TourCentralAsia, 2025), indicating that the accommodation offering remains skewed towards lower-end provision that limits average tourist expenditure per visit.

The evaluation of tourism's structural contribution must go beyond visitor counts. Tourism's value-added effect depends critically on tourist length of stay, average daily expenditure, the degree of backward linkage with local food, craft, and transport sectors, and the capacity to attract

high-yield heritage and cultural tourism segments. The development of gastronomic precincts ('Street Food' format) and the promotion of traditional crafts such as gold embroidery, ceramics, and engraving represent efforts to deepen these linkages.

4.4. Renewable Energy: An Emerging Structural Pillar

Perhaps the most transformative structural change currently underway in Bukhara Region is the rapid emergence of large-scale renewable energy as an industrial and economic activity. This shift represents both a national energy policy imperative — Uzbekistan has committed to generating 25% of total electricity from renewable sources by 2030 (Renewable Energy Asia Portal, 2026) — and a regional opportunity, given Bukhara's exceptional wind resource potential.

The flagship project is the Bash Wind Power complex, located in the Gijduvan district of Bukhara Region. The first phase — Bash 1, a 500 MW grid-connected wind power facility with a 162.5-kilometre overhead transmission line — was co-financed by ADB in 2023 and reached full commissioning in March 2025 (Construction Review Online, 2026). It is described as one of the first utility-scale renewable energy projects in Uzbekistan and one of the largest operational wind farms in Central Asia (ADB, 2025; Times of Central Asia, 2025).

In May 2026, ADB signed a USD 116 million financing package with ACWA Power for the Bash 2 Wind Power Plant — a 300 MW extension of the Bash complex, featuring 39 wind turbine generators of up to 8 MW each, a new 35/500 kV substation, and 1.5 kilometres of 500 kV overhead transmission line connecting to the national grid (ADB, 2026). The financing structure is diversified across ADB ordinary capital resources (USD 50 million), commercial lenders (USD 41 million), and the Leading Asia's Private Infrastructure Fund 2 (USD 25 million). A 25-year power purchase agreement (PPA) was signed with the National Electric Grid of Uzbekistan in November 2023, providing long-term revenue certainty.

The economic significance of this investment stream extends beyond electricity generation. During the construction phase, at least 800 jobs are expected to be created, along with at least 25 permanent operational positions (ADB, 2026). The projects also establish Bukhara Region as a hub for renewable energy infrastructure in Central Asia, potentially attracting ancillary supply chain activities, maintenance services, and technological capacity-building over the medium term.

4.5. Agriculture: Diversification and Structural Adjustment

Agriculture remains a significant employer in Bukhara Region, where 63% of the population resides in rural areas. However, the sector's structural profile is changing. National policy has discouraged the previously mandatory cotton quota system and incentivised crop diversification towards horticulture, vegetables, and orchard cultivation. In Bukhara Region specifically, plans have been advanced to cultivate pistachios on unused pasture lands, of which the region holds more than 2 million hectares (Government of Uzbekistan, 2024).

Karakul sheep breeding — a traditional specialisation of Bukhara Region and the source of the globally recognised Karakul pelt — continues to represent a niche area of comparative advantage that could be further developed through quality certification and international market development. Nationally, growing external demand for Uzbekistan's food products creates export opportunities for food preservation, processing, and packaging technologies (ITA, 2025), a demand that Bukhara Region's agroindustrial enterprises are positioned to address.

5. INTEGRATED ASSESSMENT OF STRUCTURAL CHANGES

5.1. Depth and Pace of Structural Transformation

The structural changes observed in Bukhara Region over the 2017–2026 period are substantive but uneven. The fastest transformations have occurred in the capital-intensive renewable energy sector, driven by large-scale project financing from international development institutions and private investors operating under transparent contractual frameworks. The expansion of textile manufacturing has been meaningful but remains constrained by human capital

and infrastructure bottlenecks. Tourism recovery has been impressive in visitor volume terms but lags in terms of tourist expenditure and accommodation quality.

The World Bank's Country Economic Memorandum (2025) for Uzbekistan notes that the country's economy has been relying heavily on capital investment as the primary growth engine, and that growth did not generate the desired level of employment between 2017 and 2022, though it accelerated in 2023 and 2024. Structural transformation at the regional level faces similar tensions: investment-led growth in capital-intensive sectors (energy, petrochemicals) does not automatically generate broad employment or supply chain integration benefits.

5.2. Investment Landscape and Governance

Over the past seven years, Bukhara Region attracted over USD 4 billion in total investment, enabling the development of energy, electrical engineering, chemicals, pharmaceuticals, and textiles (Government of Uzbekistan, 2024). For 2025, investment plans envisaged USD 2 billion in foreign investment to implement 106 projects, create 105,000 permanent jobs, and increase exports by USD 350 million. The Head of State characterised these targets as insufficient and instructed their upward revision (Government of Uzbekistan, 2024), signalling high-level prioritisation of accelerated structural diversification.

Investment efficiency remains a policy concern at the national level. The President noted that despite a sevenfold increase in industrial investment over six years, the possibilities of 24 special economic zones have not been fully utilised (Embassy of Uzbekistan, 2024). For Bukhara Region, this implies that the formal institutional infrastructure for investment attraction exists but requires more effective operationalisation — improvements in one-stop services, legal certainty, infrastructure connectivity, and skills availability.

5.3. Assessment Framework and Summary Evaluation

The table below summarises the assessment of structural changes across Bukhara Region's leading sectors, evaluated along four dimensions: growth momentum, employment impact, export contribution, and long-term sustainability.

Sector	Growth Momentum	Employment Impact	Export Contribution	Sustainability Rating
Oil & Gas / Refining	Moderate / Declining	High (existing)	High	Medium
Textile & Manufacturing	High	High (new jobs)	Growing	Medium-High
Tourism & Heritage	High (post-pandemic)	Medium-High	Growing	High
Renewable Energy	Very High	Moderate (capital-intensive)	N/A (domestic)	Very High
Agriculture	Moderate	High (rural)	Growing (horticulture)	Medium
Construction	High	High	Low	Medium

Source: Author's assessment based on sources cited in this study.

This assessment indicates that Bukhara Region's most promising long-term structural pillars are renewable energy and tourism, both of which combine high growth momentum with strong sustainability credentials. Textile manufacturing offers the greatest near-term employment

generation potential but requires sustained policy support and skills investment to achieve competitive quality standards. The oil and gas sector remains important for fiscal stability but is unlikely to be a driver of structural modernisation.

6. CONCLUSIONS AND POLICY RECOMMENDATIONS

Bukhara Region is undergoing a meaningful structural transformation that represents a significant departure from its Soviet-era economic profile. The convergence of national reform momentum, international investment interest, and endogenous resource advantages — wind energy, heritage tourism, agricultural diversity, natural resources — creates conditions for a diversified and increasingly resilient regional economy. However, the transformation remains incomplete and faces risks from institutional bottlenecks, skills shortages, and the potential volatility of reform implementation.

Based on the analysis presented in this article, the following policy recommendations are offered:

1. Strengthen the operational effectiveness of special economic zones in Bukhara Region by improving one-stop investment services, reducing administrative barriers, and ensuring reliable utility and logistics infrastructure.

2. Develop targeted vocational and professional training programmes aligned with the emerging demands of the textile, tourism, renewable energy maintenance, and agro-processing sectors.

3. Invest in accommodation quality and tourist service infrastructure to increase average tourist expenditure per visit, moving beyond volume targets towards value-focused tourism development.

4. Leverage the renewable energy investment pipeline to develop ancillary manufacturing and maintenance capabilities in the region, creating supply chain linkages that multiply the employment effect of large-scale energy projects.

5. Strengthen regional statistical capacity to enable more granular and timely monitoring of sectoral GRP contributions, investment outcomes, and employment generation at the district level.

The structural transformation of Bukhara Region is best understood not as a completed process but as an ongoing rebalancing of a complex regional economy navigating the intersection of global investment flows, national reform commitments, and deeply embedded local institutional legacies. The breadth and quality of policy responses over the next five years will determine whether the current structural momentum generates inclusive and sustainable regional development or remains concentrated in enclave sectors disconnected from the wider regional economy.

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