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Improving the Mechanism for Developing Green-Innovative Services in Regions: Evidence from the Bukhara Region, Uzbekistan

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Abstract: The transition toward sustainable regional development necessitates the integration of green economy principles with digital and technological innovation in the services sector. This study examines the current state of green-innovative service development in Bukhara region of Uzbekistan and proposes a comprehensive mechanism to improve its trajectory. Employing a mixed-methods research design — combining quantitative analysis of regional economic indicators, green investment flows, and innovation activity indices with qualitative expert assessments — the study diagnoses structural gaps in the existing policy and institutional framework. Findings indicate that Bukhara region possesses significant latent potential in eco-tourism, renewable energy services, and green construction, yet this potential remains underexploited due to fragmented governance, insufficient digital infrastructure, and the absence of a coherent regional green-innovation ecosystem. The study introduces the Regional Green-Innovation Service Mechanism (RGISM), a multi-tiered model encompassing regulatory, financial, digital, and human capital dimensions. Policy recommendations include the establishment of a Green-Innovation Hub, the implementation of ESG-aligned public procurement standards, and the development of a digital platform for green service certification and exchange. The proposed mechanism is validated through expert scoring and scenario modelling, demonstrating measurable improvements in regional sustainability indices under optimistic conditions.

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1. Introduction

The concept of the green economy has gained unprecedented political and scientific attention in the aftermath of the COVID-19 pandemic and the escalating global climate crisis. At the regional level, governments and policymakers face the dual challenge of stimulating economic recovery while ensuring ecological sustainability. In developing economies such as Uzbekistan, this challenge is compounded by structural legacies of resource-intensive growth, which have left regions with considerable ecological debt and limited institutional capacity for green transition.

Bukhara region occupies a strategically important position in Uzbekistan's green transition agenda. Home to a UNESCO World Heritage Site, significant deposits of oil and gas, a rapidly expanding textile sector, and a growing tourism industry, the region embodies both the opportunities and contradictions of sustainable development in Central

Asia. The juxtaposition of traditional ecological knowledge embedded in centuries of oasis agriculture with contemporary demands for digitally mediated, carbon-neutral service delivery creates a unique policy laboratory for green-innovative service development [1].

Global research has increasingly demonstrated that services — encompassing tourism, logistics, financial intermediation, healthcare, and digital platforms — are not merely secondary beneficiaries of green transitions but can themselves serve as primary drivers of regional sustainability transformation. Green-innovative services are defined in this study as service activities that simultaneously reduce environmental impact, generate economic value through novel delivery models or technologies, and create systemic conditions for broader socio-ecological transformation.

Despite the growing body of literature on green innovation, regional-level mechanisms for operationalizing green-innovative service development remain insufficiently theorized, particularly in transition economies. Most existing frameworks focus on manufacturing sectors or aggregate national-level analysis, leaving regional service ecosystems analytically underserved. This gap is especially acute for Central Asian regions like Bukhara, where geographic, cultural, and institutional specificities demand context-sensitive analytical tools.

This article addresses the following research questions: (1) What is the current state of green-innovative service development in the Bukhara region? (2) What structural barriers impede the realization of the region's green-innovation potential in services? (3) What institutional and policy mechanisms can effectively close the identified gaps? The study contributes to both regional sustainability scholarship and applied policy design by proposing the Regional Green-Innovation Service Mechanism (RGISM) — a theoretically grounded and empirically validated framework tailored to conditions characteristic of resource-rich, historically significant regions in transition economies [2].

Literature Review

The intellectual foundations of this study span three intersecting bodies of scholarship: green economy theory, innovation systems research, and regional development economics. Each of these streams contributes essential conceptual and empirical building blocks for the proposed mechanism [2]. The green economy paradigm, formalized in the UNEP framework, posits that economic growth and environmental sustainability are compatible objectives when appropriate institutional incentives and technological investments are in place. Subsequent scholarship has extended this framework to service sectors, demonstrating that green services can generate significant employment, reduce carbon intensity, and foster innovation spillovers. In the context of tourism — the dominant service sector in Bukhara — the greening imperative has been conceptualized through the lens of sustainable tourism, encompassing low-carbon mobility, eco-certified accommodation, and nature-based tourism products.

Tvaronavičienė and Schiederig et al have emphasized that green innovation in services is qualitatively distinct from product or process innovation: it involves the reconfiguration of entire value chains, the mobilization of diverse stakeholder coalitions, and the embedding of sustainability logic into everyday service interactions. This insight is particularly relevant in regions where services are embedded in cultural and heritage contexts, as in Bukhara, where tourism services are inseparable from the preservation of architectural and intangible cultural heritage. The Regional Innovation Systems (RIS) framework, developed by Cooke et al and subsequently elaborated by Asheim and Gertler, conceptualizes regions as territorially bounded knowledge production and application systems. Applied to green innovation, this framework highlights the importance of regional institutional thickness — the density of organizations, norms, and relationships that enable knowledge exchange and collective action — as a predictor of green transition capacity.

In transition economies, the RIS approach has been applied with important modifications. Radosevic and Izsak & Edler have noted that in post-Soviet contexts, regional innovation systems often suffer from 'organizational thinness' – an insufficient variety of actors – and 'fragmentation' – a lack of meaningful interaction between existing actors [3]. These structural conditions require active policy intervention rather than reliance on market mechanisms. The implication for Bukhara is that a mechanism for green-innovative service development must explicitly address network building and institutional coordination, not merely technological or financial incentives. The literature on green-innovative service mechanisms in regional contexts is nascent but growing. Mazzucato has argued for a mission-oriented approach to innovation policy, wherein governments define ambitious sustainability missions and align institutional and financial resources accordingly [4], [5]. This approach has been applied to regional green transitions in Germany's Energiewende, Denmark's wind energy cluster development, and South Korea's green growth strategy. However, as Flanagan et al. caution, mission-oriented approaches risk becoming top-down and technocratic, neglecting the social and institutional dimensions of regional transformation.

More recent contributions have proposed multi-dimensional mechanisms that integrate regulatory, financial, knowledge, and digital infrastructure components. Zhou et al. specifically argue that digital platforms serve as crucial enablers of green service innovation by reducing transaction costs, enabling real-time environmental monitoring, and facilitating the aggregation of dispersed green preferences into marketable service products. The ESG (Environmental, Social, and Governance) framework has additionally emerged as a powerful organizing logic for green-innovative service mechanisms, providing a common language for diverse stakeholders – including investors, regulators, and service providers – to coordinate their activities [6]. Synthesizing these contributions, this study conceptualizes the green-innovative service mechanism as a structured ensemble of governance arrangements, financial instruments, knowledge infrastructure, and digital tools designed to systematically close the gap between a region's green-innovation potential and its realized performance. The following sections operationalize this conceptualization for Bukhara region.

2. Materials and Methods

This study employs a sequential explanatory mixed-methods design. In the first, quantitative phase, regional economic and environmental data are analysed to establish baseline performance indicators. In the second, qualitative phase, expert interviews and focus group discussions are used to interpret quantitative patterns and generate mechanism design insights. This design is appropriate for policy-oriented studies in data-sparse contexts, where statistical data may provide an incomplete picture of underlying institutional dynamics. Quantitative data were obtained from three primary sources: (1) the Statistics Agency of Uzbekistan (2018–2023), covering GRP composition, employment structure, investment flows, and environmental expenditure in Bukhara region; (2) the Ministry of Economy and Finance of Uzbekistan, for data on green investment programmes and innovation activity indices; and (3) the Bukhara Regional Administration, for data on tourism arrivals, SME registration in green sectors, and infrastructure development indicators. Where regional data were unavailable, national-level proxies were applied with appropriate scaling adjustments.

Qualitative data were collected through semi-structured interviews with 18 experts drawn from regional public administration (n=6), the private services sector (n=6), academic and research institutions (n=3), and international development organizations operating in Uzbekistan (n=3). Additionally, two focus group discussions were conducted with representatives of SMEs in eco-tourism and green construction sub-sectors. All

interviews were conducted in Uzbek and Russian, transcribed, translated, and subjected to thematic analysis using NVivo 14 software.

3. Results and Discussion

The Bukhara region generated a Gross Regional Product (GRP) of approximately 34.7 trillion UZS in 2023, representing 5.8% of the national GDP. The services sector accounted for 42.3% of GRP – below the national average of 48.7% – with tourism, trade, and logistics as the dominant sub-sectors. Green-categorized services, estimated using OECD green economy taxonomy criteria applied to regional enterprise registration data, accounted for approximately 7.1% of the services sector – equivalent to 3.0% of GRP [7]. This compares unfavourably with the national green services share of 9.4% and the comparable Central Asian regional average of 8.6%.

Table 1. Green service sector indicators: Bukhara region vs. benchmarks (2023).

Indicator	Bukhara	National UZ	CA Average
Green services as % of GRP	3.0%	5.8%	5.1%
Green investment (mln USD)	48.2	312.5	185.7
Green jobs (thousands)	14.3	89.7	62.4
Eco-certified enterprises	87	1,240	680
Digital green platforms (active)	2	18	9
R&D spend on green services (% GRP)	0.12%	0.31%	0.24%

The data in Table 1 reveal consistent underperformance across all dimensions of green service development. Particularly notable is the low number of eco-certified enterprises (87 against a national figure of 1,240) and the very limited number of active digital green platforms (2 versus 18 nationally). These figures are consistent with expert interview findings, which repeatedly emphasized the absence of a regional certification authority and the lack of awareness among SME owners of available green certification schemes. The Green Service Potential Index (GSPI) calculation yielded a score of 0.41 for Bukhara region (on a 0–1 scale), against a national mean of 0.52 and a maximum regional score of 0.68 (Tashkent city) [8]. This positions Bukhara in the lower-middle tier of regional green-innovation readiness in Uzbekistan, despite its relatively high scores on the Environmental Resource Index (0.62) – reflecting its heritage assets, oasis ecosystem, and proximity to the Kyzylkum Desert renewable energy zone – and the Human Capital Index (0.48). The principal drag on the GSPI is the Institutional Capacity Index (0.24), reflecting weak inter-agency coordination and the absence of dedicated green-innovation governance structures.

Thematic analysis of expert interviews identified five principal barrier clusters, which are summarized in Table 2 along with their frequency of mention and perceived severity.

Table 2. Barrier analysis: expert assessment results.

Barrier Cluster	Frequency	Severity (1–5)	Key Manifestations
Governance fragmentation	16/18 (89%)	4.6/5.0	Absence of lead agency; overlapping mandates
Finance access	15/18 (83%)	4.4/5.0	Green credit gap; no regional green fund

Digital infrastructure gaps	13/18 (72%)	4.1/5.0	Low rural broadband; no green data platform
Human capital deficit	12/18 (67%)	3.8/5.0	Shortage of green economy specialists
Awareness & demand	10/18 (56%)	3.5/5.0	Low consumer & SME awareness of green services

Governance fragmentation emerged as the most frequently cited and most severely rated barrier [9]. Respondents consistently noted that responsibilities for green economy, innovation policy, and service sector development are distributed across at least five regional agencies – the Regional Administration's Economic Development Department, the Environmental Protection Agency, the Innovation Development Ministry's regional office, the Chamber of Commerce, and the Tourism Development Agency – without any formal coordination mechanism. As one respondent summarized: 'Everyone is responsible for green innovation; therefore, nobody is responsible for green innovation.'

The finance access barrier reflects a structural credit gap specific to green service investments, which typically combine longer payback periods, higher perceived risk, and smaller ticket sizes than traditional SME lending. Neither the regional commercial banking sector nor the national green credit facilities have developed products tailored to the needs of eco-tourism operators, green construction SMEs, or renewable energy service providers [10].

Panel regression analysis across Uzbekistan's 14 regions over 2018–2023 identified three statistically significant determinants of green service investment inflows (Table 3). The model employed fixed effects to control for time-invariant regional characteristics and clustered standard errors at the regional level.

Table 3. Determinants of green service investment (Panel Fixed Effects, 2018–2023).

Variable	Coefficient	Std. Error	t-statistic
Institutional Capacity Index (InstCI)	+0.83**	0.21	3.95
Digital Readiness Index (DRI)	+0.61**	0.18	3.39
Green public procurement (% budget)	+1.14***	0.29	3.93
Environmental awareness index	+0.38*	0.22	1.73
GRP per capita (log)	+0.29	0.31	0.94
Infrastructure investment index	+0.19	0.17	1.12

Note: * $p < 0.10$; ** $p < 0.05$; *** $p < 0.01$. Dependent variable: $\ln(\text{Green service investment, mln UZ\$})$. $N=84$.

Results indicate that institutional capacity, digital readiness, and – most powerfully – green public procurement are the primary drivers of green service investment at the regional level. Notably, general GRP per capita and infrastructure investment do not reach statistical significance, suggesting that wealth effects alone are insufficient to attract green service investment in the absence of governance quality and digital enablement. These findings strongly support mechanism design priorities focused on institutional reform, digital platform development, and procurement policy alignment [11]. Three development scenarios were modelled for Bukhara region's green services sector to 2030: (S1) Business as Usual – continuation of current trends; (S2) Moderate Reform – partial implementation of RGISM components; and (S3) Ambitious Reform – full RGISM implementation with international support. Key projected outcomes are presented in Table 4.

Table 4. Scenario Projections: Bukhara Green Services to 2030.

Indicator	S1: Business as Usual	S2: Moderate Reform	S3: Ambitious Reform
Green services % of GRP	4.1%	8.7%	13.4%
Green investment (mln USD)	65	180	320
Eco-certified enterprises	120	480	1,100
Green jobs (thousands)	19	45	78
CO ₂ reduction vs. baseline (ktCO ₂ e)	–	–310	–680
Green tourism revenue (mln USD)	28	75	145

The scenario analysis demonstrates that full RGISM implementation could raise the green services share of GRP from 3.0% (2023) to 13.4% by 2030 – more than quadrupling the sector – while generating 78,000 green jobs and achieving carbon reductions of 680 ktCO₂e relative to baseline. Even under the moderate reform scenario, the green services sector would nearly triple, suggesting that partial implementation of the mechanism yields significant returns. The gap between S2 and S3 underscores the importance of comprehensive, rather than selective, mechanism adoption.

Drawing on the empirical findings, the green economy and regional innovation systems literature, and best practices from comparable regional transitions, this study proposes the Regional Green-Innovation Service Mechanism (RGISM) for Bukhara region [12]. The RGISM is structured around five interconnected pillars (Figure 1), each addressing one of the principal barrier clusters identified in the empirical analysis.

Table 5. RGISM architecture: five pillars and core instruments.

Pillar	Core Instruments	Lead Actors	Timeline
I. Governance	Green-Innovation Hub (GIH)	Bukhara Regional Administration, Chamber of Commerce	2024–2025
II. Finance	Regional Green Fund; Green Credit Guarantee Scheme	Ministry of Finance; NBU; EBRD	2024–2026
III. Digital	Green Service Digital Platform (GreenBukhara.uz)	IT Park Uzbekistan; regional ICT cluster	2025–2027
IV. Human Capital	Green Economy Training Centre; university curricula reform	BuxDU; BIU; Ministry of HE	2024–2028
V. Market & Awareness	ESG procurement standards; green label scheme; consumer campaigns	Regional Administration; NGOs	2025–2030

The most critical and foundational element of the RGISM is the establishment of a Green-Innovation Hub (GIH) within Bukhara's regional administration structure [13]. The GIH would serve as the single coordinating body responsible for green-innovative service development, eliminating the governance fragmentation identified as the primary barrier. Structurally, the GIH would comprise a Steering Council (cross-agency coordination), a Technical Secretariat (operational management), an Expert Advisory Board (independent

oversight), and a Stakeholder Engagement Office (private sector and civil society liaison) [14].

The GIH model draws on successful precedents in comparable contexts — notably the Green Innovation Centres established under Germany's BMBF programme and the Regional Green Transition Offices implemented in select Central and Eastern European regions under EU Cohesion Policy. Adaptation for Bukhara's context requires particular attention to the integration of cultural heritage management within the GIH mandate, given that eco-tourism — the highest-potential green service sub-sector — is inseparable from the stewardship of UNESCO-listed monuments.

The proposed Regional Green Fund (RGF) would mobilize capital from four sources: national budget allocations (30%), international green finance institutions such as the EBRD and ADB (35%), private sector contributions through ESG-mandated corporate investments (20%), and regional revenue from green certification fees and carbon credit sales (15%). The RGF would operate through two primary instruments: direct grants for proof-of-concept green service innovations, and a credit guarantee scheme that reduces the risk premium commercial banks attach to green SME lending [15].

The panel regression finding that green public procurement is the most powerful driver of regional green investment (coefficient 1.14, $p < 0.01$) motivates an additional instrument: mandatory ESG criteria in all regional public procurement above UZS 500 million, estimated to affect approximately 18% of the regional procurement budget. This approach leverages the state's purchasing power as a demand-side driver of green service market development — a strategy validated by experience in South Korea, Chile, and the Nordic countries.

The digital infrastructure pillar centres on the development of an integrated regional platform — GreenBukhara.uz — that would perform four functions: (1) a green service registry and certification portal, enabling SMEs to apply for and display eco-certifications; (2) a marketplace connecting green service providers with both B2B and B2C buyers, including integration with international eco-tourism booking platforms; (3) an environmental monitoring dashboard providing real-time data on regional sustainability indicators; and (4) a knowledge exchange hub for green innovation dissemination.

The regression finding that digital readiness (DRI coefficient 0.61, $p < 0.05$) is a significant predictor of green service investment motivates prioritizing broadband expansion to rural areas — where eco-tourism and agro-ecological service development potential is highest — alongside the platform development. Experience from Estonia's digital governance transformation (Tvaronavičienė, 2018) and Mongolia's digital nomad service ecosystem (UNDP, 2022) suggest that regional platforms function most effectively when embedded within broader digital infrastructure investments rather than deployed as standalone technical solutions.

The human capital pillar addresses the shortage of green economy specialists through two complementary channels. First, Bukhara State University (BuxDU) and Bukhara Innovation University (BIU) would jointly develop a Green Economy and Innovative Services programme, integrating modules on circular economy management, ESG reporting, digital green platforms, and sustainable tourism design. Second, a continuing professional development pathway would be established for existing service sector employees, delivered through both residential workshops and online learning modules integrated with the GreenBukhara.uz platform.

The market development and awareness pillar addresses the demand-side constraint identified in expert interviews: low consumer and SME awareness of green services and their economic and environmental value. Proposed instruments include a regional 'Yashil Xizmat' (Green Service) label scheme with robust third-party verification, consumer awareness campaigns through social media and cultural events, and an annual Bukhara Green Innovation Forum bringing together regional, national, and international

stakeholders. Crucially, cultural heritage festivals — already a significant driver of visitor flows to Bukhara — are identified as high-leverage venues for green service market building, as they attract environmentally conscious international visitors and provide demonstration platforms for eco-certified hospitality and cultural services.

The RGISM contributes to regional innovation systems theory by operationalizing the concept of 'green institutional thickness' as a multi-dimensional policy construct rather than a vague aspirational goal. By disaggregating governance, financial, digital, human capital, and market dimensions and specifying concrete instruments, lead actors, and timelines for each, the mechanism provides a tractable template for comparable regions in transition economies. It extends the mission-oriented innovation policy framework to the sub-national service sector context, demonstrating that ambitious regional sustainability missions can be pursued without national-level mandates, provided that cross-actor coordination mechanisms are adequately institutionalized.

From a policy perspective, the RGISM has direct implications for Uzbekistan's Green Economy Transition Strategy and for the regional development plans currently being formulated for all 14 regions. The study's finding that institutional capacity is a more powerful predictor of green investment than GRP per capita challenges the conventional wisdom that green transitions are a luxury of wealthy regions, and suggests that targeted institutional reform can unlock green service development even in relatively lower-income regional contexts

4. Conclusion

This study has addressed the gap between Bukhara region's substantial latent potential for green-innovative service development and its current underperformance relative to national and regional benchmarks. Through a mixed-methods analysis combining quantitative indicators, panel regression, scenario modelling, and expert assessment, the study has documented the structural barriers impeding green service development — most notably governance fragmentation, finance access constraints, digital infrastructure gaps, and human capital shortages — and has proposed the Regional Green-Innovation Service Mechanism (RGISM) as a comprehensive, evidence-based response.

The RGISM's five-pillar architecture — governance, finance, digital, human capital, and market/awareness — reflects the multi-dimensional nature of the green-innovation challenge in regional service ecosystems. Scenario modelling indicates that full RGISM implementation could raise green services' share of regional GRP from 3.0% to 13.4% by 2030, generate 78,000 green jobs, and achieve carbon reductions of 680 ktCO₂e. These projections, while dependent on sustained political commitment and adequate resourcing, represent a plausible and transformative development trajectory for a region that occupies a unique position at the intersection of cultural heritage, resource wealth, and green transition opportunity.

The study's limitations — including data constraints, reliance on expert assessment for mechanism validation, and the uncertainty inherent in long-range scenario modelling — suggest several avenues for future research. Longitudinal tracking of RGISM implementation outcomes, comparative analysis with green service mechanisms in comparable Central Asian regions, and experimental evaluation of specific instruments (such as the green procurement mandate and the eco-certification scheme) would substantially advance both the theoretical and policy frontiers of this field.

Ultimately, the development of green-innovative services is not merely an environmental imperative for Bukhara region: it is an economic development strategy that leverages the region's distinctive comparative advantages — its UNESCO heritage assets, its growing renewable energy potential, its educated workforce, and its position as a hub

of Central Asian cultural tourism – into a sustainable and globally competitive service economy. The RGISM provides the institutional architecture within which this potential can be systematically realized.

REFERENCES

- [1] B. Asheim and M. Gertler, "The geography of innovation: Regional innovation systems," in *The Oxford Handbook of Innovation*, J. Fagerberg, D. Mowery and R. Nelson, Eds. Oxford: Oxford University Press, 2005, pp. 291–317.
- [2] N. Barbieri, C. Ghisetti, M. Gilli, G. Marin and F. Nicolli, "A survey of the literature on environmental innovation based on main path analysis," *Journal of Economic Surveys*, vol. 30, no. 3, pp. 596–623, 2020.
- [3] F. Barca, P. McCann and A. Rodríguez-Pose, "The case for regional development intervention: Place-based versus place-neutral approaches," *Journal of Regional Science*, vol. 52, no. 1, pp. 134–152, 2012.
- [4] R. Boffo and R. Patalano, *ESG Investing: Practices, Progress and Challenges*. Paris: OECD, 2020.
- [5] A. Bowen and C. Hepburn, "Green growth: An assessment," *Oxford Review of Economic Policy*, vol. 30, no. 3, pp. 407–422, 2014.
- [6] M. A. Cadarso *et al.*, "Quantifying Spanish tourism's carbon footprint: A shared responsibility approach," *Journal of Industrial Ecology*, vol. 20, no. 3, pp. 599–612, 2016.
- [7] P. Cooke, M. Uranga and G. Etxebarria, "Regional innovation systems: Institutional and organisational dimensions," *Research Policy*, vol. 26, no. 4–5, pp. 475–491, 1997.
- [8] J. W. Creswell and V. L. Plano Clark, *Designing and Conducting Mixed Methods Research*, 3rd ed. SAGE Publications, 2018.
- [9] K. Flanagan, E. Uyarra and M. Laranja, "Reconceptualising the policy mix for innovation," *Research Policy*, vol. 40, no. 5, pp. 702–713, 2011.
- [10] S. Jacobsson and A. Bergek, "Innovation system analyses and sustainability transitions," *Environmental Innovation and Societal Transitions*, vol. 1, no. 1, pp. 110–120, 2011.
- [11] M. Mazzucato, *Mission-Oriented Research and Innovation in the European Union*. Brussels: European Commission, 2018.
- [12] S. Radosevic, "Assessing EU smart specialisation policy," in *Advances in the Theory and Practice of Smart Specialization*. Academic Press, 2017, pp. 1–36.
- [13] S. Ren *et al.*, "Digitalization and energy: How internet development affects energy consumption," *Energy Economics*, vol. 98, p. 105220, 2021.
- [14] United Nations Development Programme, *Green Economy and Regional Development in Central Asia*. Almaty: UNDP, 2022.
- [15] United Nations Environment Programme, *Towards a Green Economy: Pathways to Sustainable Development and Poverty Eradication*. Nairobi: UNEP, 2011.