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СОВЕРШЕНСТВОВАНИЕ МЕХАНИЗМА ОБЕСПЕЧЕНИЯ ЭКОНОМИЧЕСКОЙ БЕЗОПАСНОСТИ РЕГИОНА В УСЛОВИЯХ ПЕРЕХОДА К ЗЕЛЕНОЙ ЭКОНОМИКЕ

Аннотация. *Зеленая трансформация изменяет условия устойчивости регионального воспроизводства. Цель исследования — разработать механизм ее связи с экономической безопасностью региона. Применены системный анализ, контент-анализ документов и селективный перенос политики. Предложены четырехканальная модель и критерий дополнительности для отбора проектов в Кашкадарьинской области.*

Ключевые слова: *зеленая экономика, региональная экономическая безопасность, ресурсная эффективность, зеленые инвестиции, циркулярная экономика, Кашкадарьинская область.*

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IMPROVING THE MECHANISM FOR ENSURING REGIONAL ECONOMIC SECURITY DURING THE TRANSITION TO A GREEN ECONOMY

Abstract. *Green transformation changes the conditions of regional economic resilience. The study develops a mechanism linking it with regional economic security. System analysis, document content analysis and selective policy transfer are applied. A four-channel model and an additionality criterion are proposed for project selection in Kashkadarya.*

Keywords: *green economy, regional economic security, resource efficiency, green investment, circular economy, Kashkadarya region.*

Introduction

Climate risks, water scarcity, resource-price volatility and technological dependence broaden the scope of regional economic security. In this context, the green economy is not only environmental policy but also a means of reducing economic vulnerability [1; 2].

Uzbekistan has formalized the green transition in strategic policy documents [3; 4]. In Kashkadarya, specialization in oil and gas, chemicals, construction and agriculture generates income while increasing exposure to resource intensity and water scarcity.

The study aims to link green-economy instruments to the reduction of specific regional threats.

Methods and Research Design

The study is conceptual and applied. Content analysis of sources [1–6] identified green-transformation instruments; systems analysis linked them to regional threats; and selective policy transfer adapted the solutions to Kashkadarya’s specialization. The unit of analysis is a regional governance mechanism rather than a stand-alone energy project.

Results of the Original Author Research

The proposed mechanism comprises threat diagnosis, instrument selection, stakeholder coordination, financing and monitoring. A project enters the regional portfolio only when its target threat, transmission channel, responsible institution and outcome indicator have been specified.

The model covers four channels. The energy channel reduces energy intensity and supply interruptions [5]. The resource-production channel supports output under water or raw-material constraints. The investment-technology channel links finance to local capabilities. The circular channel uses industrial symbiosis to reduce demand for primary resources [6].

Table 1 — Mechanism matrix for Kashkadarya region

Threat	Green instrument	Security outcome	Monitoring indicator
Interruptions and rising energy costs	Energy efficiency and distributed generation	Energy-supply resilience	Energy intensity; outage hours
Water and raw-material scarcity	Water saving and material efficiency	Output stability	Resource use per unit of output
Technological dependence	Green finance and localization	Production and technological resilience	Localization; productivity
Waste and supply disruption	Industrial symbiosis and recycling	Resource security	Share of secondary materials

The proposed security-additionality criterion is $A_j=1$ when $\Delta V_j<0$ and $\Delta D_j \leq \tau$; otherwise $A_j=0$. Here, ΔV_j is the change in the targeted vulnerability, ΔD_j is the new import or technological dependence, and τ is the acceptable threshold. An environmental gain without lower vulnerability is not counted as an economic-security outcome.

For Kashkadarya, the mechanism requires an inventory of resource flows, a project portfolio and monitoring of costs, downtime and import dependence. Its novelty lies in combining four green-economy channels with a safeguard against new dependence.

Implementation follows a double-filter procedure. First, a project is tested for additionality: whether it reduces the vulnerability for which it is financed. Second, the safeguard condition tests whether new dependence exceeds the

permitted threshold. Baseline values for resource intensity, downtime, production cost and import content are recorded before implementation and compared with project targets afterward. If an environmental indicator improves while economic vulnerability does not decline, the project is revised and is not reported as a security outcome. This procedure separates substantive effects from formal absorption of green finance.

Operationalization requires a regional project register with comparable baseline and target values. For each intervention, the register should specify the responsible organization, financing source, implementation period, affected sector and expected change in vulnerability. Monitoring should combine resource indicators with economic-security indicators: energy, water and material use per unit of output; hours of production interruption; variation in operating costs; import content of equipment and maintenance; and availability of local technical personnel. Annual comparison with the pre-project baseline would allow the regional administration to distinguish projects that merely absorb green finance from those that strengthen production continuity and resource security. The register would also reveal cross-sector effects: recycled output from one enterprise may reduce raw-material dependence in another, whereas imported green equipment may create a new maintenance or spare-parts risk. This information supports project sequencing and timely corrective action.

Conclusion

Green transformation strengthens regional economic security only when it produces a measurable reduction in a specific vulnerability without creating excessive new dependence. Priorities for Kashkadarya are energy and water efficiency, localization of capabilities and industrial symbiosis. The next research stage is to test the matrix using district- and sector-level data.

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