

CHALLENGES AND POLICIES FOR A CONSUMER CIRCULAR ECONOMY IN ALBANIA'S AGRICULTURAL SECTOR

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Abstract

Agriculture remains a cornerstone of developing economies, providing livelihoods and sustaining rural communities. In Albania, the sector accounts for over 18.5% of the national GDP (INSTAT, 2023), yet it faces structural challenges including low productivity, inefficient resource utilization, environmental degradation, and vulnerability to climate change. These persistent issues underscore the urgency of transitioning from a linear to a circular economic model – one that emphasizes sustainability, resource efficiency, and closed-loop systems. This study investigates the alignment between Albania's regional development policies and the adoption of circular economy (CE) principles in the agricultural sector. Particular attention is paid to the integration of CE in national subsidy schemes and legal frameworks, reflecting Albania's commitment to sustainable development and European Union accession objectives. Findings reveal that while significant strides have been made – such as the introduction of targeted subsidy schemes in 2024 and alignment with the European Green Deal – implementation remains fragmented and constrained by institutional, financial, and technical barriers. The study advocates for a comprehensive and integrated policy framework that synergizes CE goals with regional development priorities, enhanced stakeholder engagement, and capacity-building initiatives. Accelerating Albania's

transition to a circular agriculture economy will not only foster environmental sustainability but also improve economic resilience and regional equity.

Keywords: *circular economy, agriculture subsidies, policy impact, sustainable development, Albania.*

JEL Classification: Q01, Q56

1. INTRODUCTION

Albania's agricultural sector plays a vital role in the country's socio-economic fabric, employing nearly 36% of the labor force and serving as a key income source for rural communities (INSTAT, 2023). Despite its importance, the sector is marked by fragmented landownership, outdated technologies, poor infrastructure, and limited access to finance, which collectively constrain productivity and competitiveness. Environmental pressures – such as soil degradation, water scarcity, and greenhouse gas emissions – further highlight the unsustainability of current agricultural practices and the urgent need for systemic transformation.

In response to these challenges, the integration of circular economy (CE) principles into national agricultural strategies is gaining attention. A circular economy promotes a regenerative model that seeks to design out waste, keep products and materials in use for as long as possible, and regenerate natural systems. In agriculture, this means shifting towards practices that close nutrient loops, minimize synthetic input use, valorize agricultural residues, and support biodiversity. The CE approach is particularly relevant for Albania, where agricultural systems are still predominantly linear and dependent on intensive resource extraction.

Recognizing the strategic importance of transitioning to a CE, the Albanian government has begun aligning national policies with the European Green Deal and the EU Circular Economy Action Plan. As an EU candidate country, Albania is progressively harmonizing its legal and institutional frameworks with EU *acquis*, particularly those concerning environmental sustainability, climate action, and rural development. The National Strategy for Development and Integration (NSDI) 2030, the National Plan for European Integration, and the National Plan for Integrated Waste Management 2020–2035 are among the key policy documents that integrate circularity goals into development planning.

The Ministry of Agriculture and Rural Development (MARD) has taken important steps to reform the agricultural subsidy system to support environmentally friendly practices. In 2024, the ministry allocated 3.9 billion ALL in direct subsidies aimed at enhancing sustainability in agriculture. The programs prioritize excise-free fuel for farm operations, grants for climate-resilient infrastructure such as greenhouses, and support for the modernization of agricultural machinery. These subsidies are increasingly conditioned upon the adoption of sustainable practices, including the use of organic fertilizers, reduction

of chemical inputs, water-saving irrigation technologies, and soil conservation techniques.

Efforts to operationalize CE principles are also supported by international partners, including the European Union, FAO, GIZ, and the World Bank, through technical assistance, pilot projects, and funding instruments. However, the implementation of CE in Albanian agriculture remains at an early stage. Major constraints include limited institutional capacity, weak enforcement of environmental regulations, fragmented inter-ministerial coordination, and a lack of financial incentives tailored to circular innovations. Moreover, farmers and agricultural entrepreneurs often lack awareness and technical knowledge about CE practices, making outreach, training, and knowledge transfer critical components of the transition.

As Albania advances toward EU membership, the pressure to adopt comprehensive and inclusive CE strategies in agriculture will intensify. Integrating CE principles into regional development frameworks and national rural policies not only aligns with EU accession criteria but also strengthens the country's resilience to external shocks, such as market volatility and climate change. The creation of a coherent, multi-level governance structure – encompassing national, regional, and local actors – is essential to mainstream circular practices and ensure equitable and effective implementation.

This paper aims to explore the interplay between Albania's regional development policies and CE adoption in agriculture, assessing how current subsidy schemes, legal frameworks, and stakeholder initiatives contribute to or hinder the realization of a circular and sustainable agricultural economy.

2. METHODOLOGY

This study employs a mixed-methods research approach to provide a comprehensive analysis of CE integration into Albania's agricultural subsidy system. The primary objectives are:

1. To analyze secondary data on government subsidies and their contribution to circular economy practices in agriculture.
2. To evaluate the effectiveness of these subsidies using key impact indicators.
3. To identify barriers and enabling factors affecting the implementation of CE principles in agricultural policy.

Data sources include government documents, statistical reports from MARD and INSTAT, and academic literature. A document analysis methodology is applied to assess the legal and strategic alignment of subsidies with CE principles. Quantitative data from subsidy programs are examined to determine distribution patterns and beneficiary outcomes.

3. LITERATURE REVIEW

The transition to a circular economy in agriculture is increasingly viewed as essential to achieving environmental sustainability and economic resilience in the face of climate change and resource constraints. International literature highlights CE as a model that closes resource loops through recycling, reuse, and sustainable design (Geissdoerfer *et al.*, 2017; Kirchherr *et al.*, 2018). In agriculture, this translates into practices such as nutrient recycling, organic farming, composting, and the use of renewable energy in production systems (FAO, 2020).

In the Albanian context, the integration of CE principles remains in a nascent stage, although legal and strategic frameworks are gradually evolving. The National Waste Management Plan and environmental legislation signal a policy shift toward sustainability, and the government has increasingly linked agricultural subsidies to environmental and climate goals. Initiatives under the European Green Deal and Albania's EU accession process have further reinforced the momentum toward CE, particularly through funding and policy harmonization.

However, several empirical studies note that the practical application of CE principles in Albanian agriculture is limited. Barriers include a lack of institutional coordination, insufficient training among farmers, inadequate infrastructure for waste processing and renewable energy, and limited access to green financing. Moreover, while subsidy schemes have proliferated, including support for organic farming, greenhouse construction, and modern equipment, there is little evidence that these schemes are explicitly designed with CE outcomes in mind.

This study contributes to the literature by evaluating the alignment between agricultural subsidies and CE objectives, assessing the impact of such interventions on sustainability and rural development outcomes, and identifying actionable policy recommendations.

4. STATISTICAL DATA RESULTS ANALYSIS

Albania's agricultural sector contributes significantly to the national economy, accounting for approximately 18.5% of GDP and employing over one-third of the total workforce, according to the latest data from INSTAT (2023). The sector remains predominantly rural, with over 45% of the population living in rural areas, many of whom depend directly or indirectly on agriculture for their livelihoods. However, agriculture in Albania is characterized by small, fragmented farms – with the average farm size less than 1.2 hectares – which limits economies of scale and modernization efforts (INSTAT, Agricultural Census 2018; Eurostat, 2022).

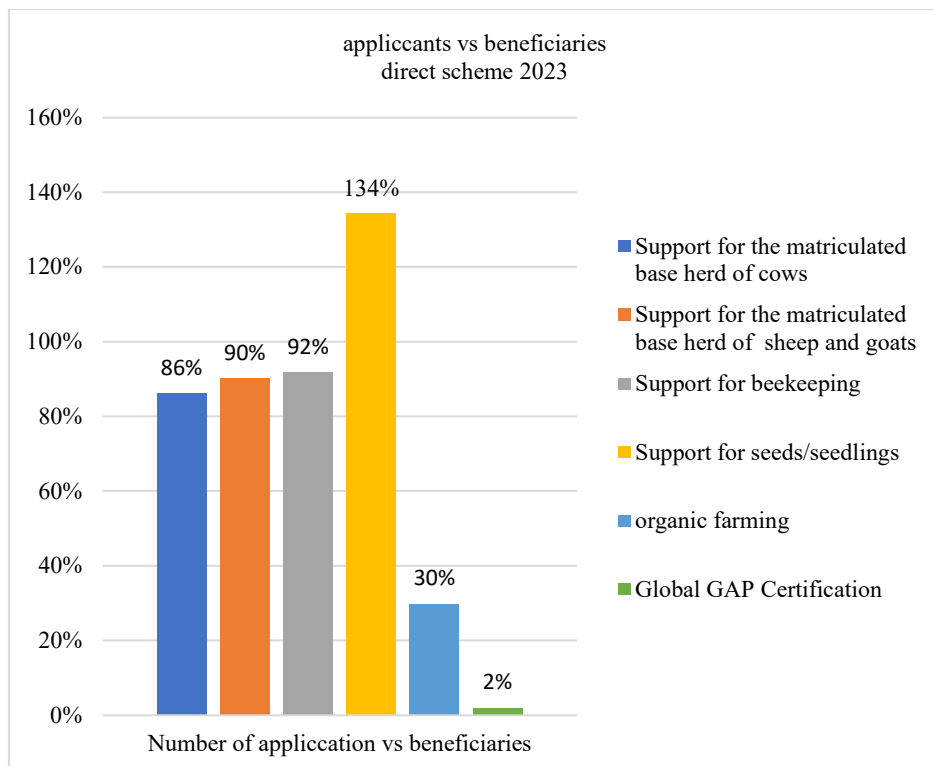
The sector also lacks in terms of productivity and innovation. According to FAOSTAT (2023) and World Bank Development Indicators, Albania's agricultural value added per worker is significantly lower than the EU average,

reflecting underinvestment in technology, infrastructure, and sustainable practices. Water use in irrigation remains inefficient, while fertilizer and pesticide usage is often unregulated, contributing to land degradation and water pollution. INSTAT reports that more than 60% of Albania's arable land is subject to moderate to severe erosion risk, further underscoring the need for sustainable land and resource management (more details are in table 1)

Table 1. Key Indicators on Agriculture and Circular Economy in Albania

Indicator	Value / Description	Source
Agriculture share of GDP	18.5%	INSTAT, 2023
Agricultural employment	~36% of total workforce	INSTAT, 2023
Rural population share	45%	INSTAT, 2022
Average farm size	1.2 hectares	INSTAT, Agricultural Census 2018
Land affected by erosion	>60% of arable land	Ministry of Environment, 2021
Agricultural value added per worker	~\$3,000 (USD, est.)	World Bank, 2023
Subsidies allocated to agriculture (2024)	3.9 billion ALL	Ministry of Agriculture, 2024
CE-specific initiatives in agriculture	Waste reduction, eco-technologies, greenhouse support	MARD, 2024; EU Delegation
National CE policy alignment	Aligned with EU Green Deal & CE Action Plan	NSDI 2030; National CE Roadmap

In addition to INSTAT, national policy documents such as the National Strategy for Agriculture and Rural Development (NSARD) 2021–2027 and the National Environmental Strategy provide a framework for agricultural modernization and environmental protection, incorporating sustainability and circular economy objectives. The 2024 Budget Report from the Ministry of Finance and Economy details the financial allocations for agriculture, including the 3.9 billion ALL allocated for sustainability-oriented subsidies (MARD, 2024). These schemes include support for excise-free fuel, greenhouse technologies, organic production, and improved waste management – all integral to advancing circular economy practices.



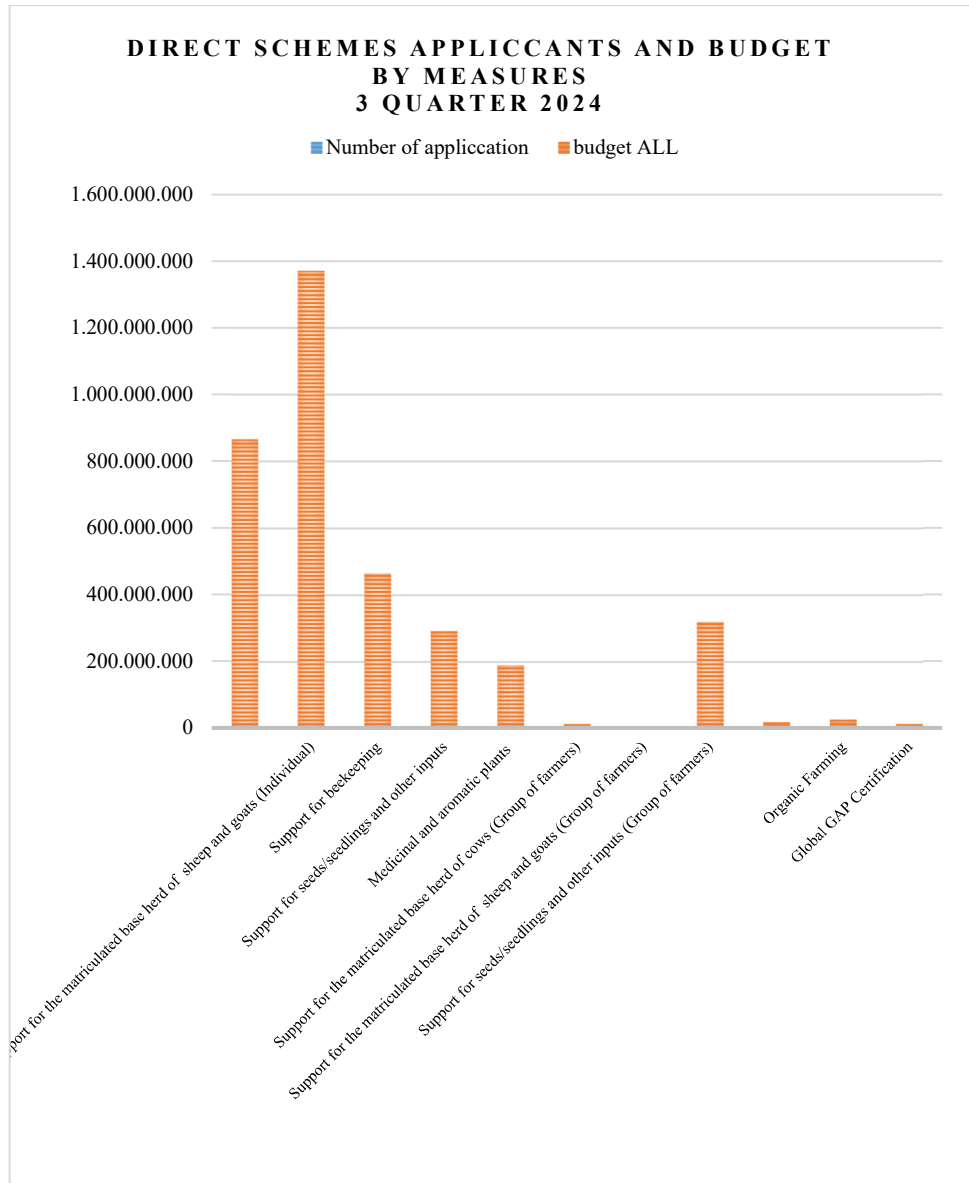
Source: Ministry of Agriculture and Rural Development, annual report 2023

Chart 1. Applicants vs beneficiaries by measures direct schemes financed through national budget, 2023

Based on the data analyses it results that national program for agriculture number of beneficiaries is the highest for the matriculated base herd of sheep and goats, and for seed and seedlings meanwhile there is the lowest number of beneficiaries for organic farming only 30 % of applicants benefited the support.

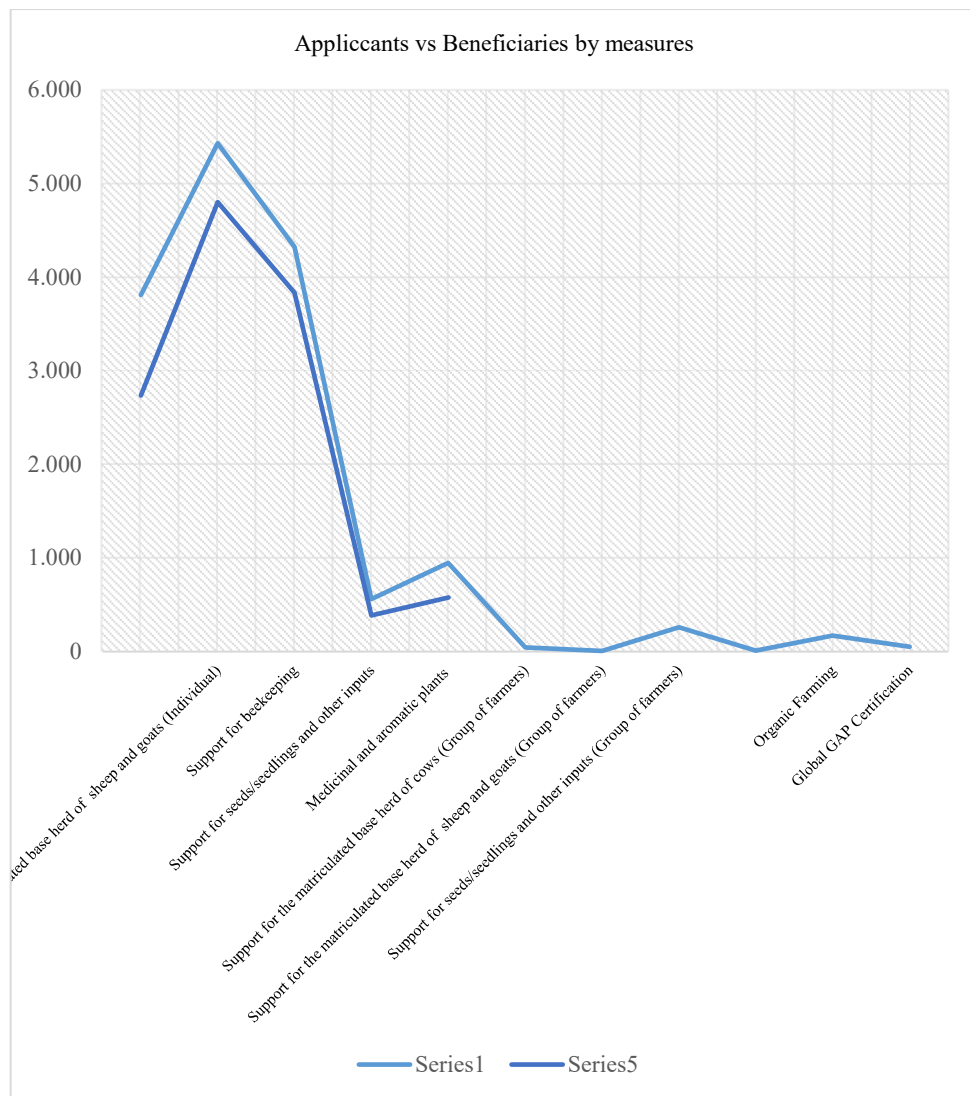
During the analysis of data, it results that there is a higher number of applicants compared to the beneficiaries, that shows lack of budget to subsidize all farmers.

Analysis of data from MARD's 2023 and 2024 reports reveals key trends in the implementation of agricultural subsidy schemes. Direct support programs funded through the national budget show a high concentration of beneficiaries in livestock-related measures, especially for sheep and goat herds, and for seed and seedling support.



Source: Ministry of Agriculture and Rural Development, 2024

Chart 2. Applicants and budgeted by measures. direct schemes financed through national budget



Source: Ministry of Agriculture and Rural Development, 2024

Chart 3. Applicants vs beneficiaries by measures. direct schemes financed through national budget

Conversely, support for organic farming remains limited, with only 30% of applicants receiving subsidies. This indicates potential misalignment between policy goals and implementation. Budget constraints also surface, as a significantly higher number of applicants than beneficiaries is recorded across most schemes.

Visual data presented in charts further illustrate this gap between application and funding, suggesting that while demand for support is high, fiscal and administrative limitations restrict comprehensive implementation.

The results of the analysis indicate a mixed pattern in the effectiveness of current agricultural subsidy schemes in promoting circular economy (CE) principles in Albania. Based on 2023 and 2024 data from the Ministry of Agriculture and Rural Development (MARD), several key findings emerge:

High Participation in Conventional Subsidies: Livestock farming received the largest portion of national subsidies, particularly for sheep and goat herds. These measures, while important for economic stability, largely follow linear production models with minimal incorporation of CE practices such as nutrient recycling or waste reduction.

Limited Support for Organic Farming: Despite national commitments to sustainable development, only 30% of applicants for organic farming received subsidies. This reflects both budgetary limitations and a lack of structured incentives for CE-aligned practices such as composting, reduced pesticide use, and integrated soil fertility management.

Mismatch Between Demand and Funding Capacity: Visual data analysis shows a consistently higher number of applications than actual beneficiaries across all subsidy programs. In 2023, only 52% of all applicants received some form of support, illustrating a demand-supply imbalance that restricts broader CE implementation.

Underutilization of EU IPARD II Funds: While Albania received over €94 million under IPARD II, absorption rates remain below EU averages. Project data suggests that complex administrative procedures and limited advisory services deter participation, especially for CE-targeted investments such as biogas systems, eco-efficient irrigation, and circular packaging.

Lack of Monitoring Indicators: None of the subsidy schemes currently include specific CE performance indicators. As a result, it is difficult to assess whether financial support leads to tangible improvements in resource efficiency, waste reduction, or ecosystem services.

5. CONCLUSIONS AND RECOMMENDATIONS

During the design of policy making in agriculture sector Subsidies in Albania should improve Policy Integration Develop targeted policies that encourage Circular Economy in agriculture, supported by clear incentives and regulatory frameworks.

Improve capacity, Train farmers and agribusinesses on CE practices and their economic and environmental benefits.

Investment in infrastructure by establishing composting facilities, biogas plants, and water recycling systems in agricultural regions.

Market development, create demand for recycled and bio-based agricultural products through subsidies, awareness campaigns, and public procurement. Research and innovation, Support R&D for CE technologies and practices tailored to Albania's agricultural context.

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