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# Sustainable food systems and rural livelihoods - the dairy case in Albania

National Policy Document

# SUSTAINABLE FOOD SYSTEMS AND RURAL LIVELIHOODS - THE DAIRY CASE IN ALBANIA.

NATIONAL POLICY DOCUMENT

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# EXECUTIVE SUMMARY

Albania's dairy sector sits at the heart of the country's agricultural economy and rural livelihoods, accounting for approximately 40% of agricultural output and serving as a key source of nutrition and income for a large share of rural households. However, the sector is at a crossroads. Structural weaknesses ranging from production fragmentation, informal trade, weak market linkages, to low productivity and environmental pressure threaten its sustainability. At the same time, Albania's European integration process presents both an opportunity and an imperative: to align the country's agri-food systems with EU standards on food safety, environmental protection and rural development.

This policy paper offers an in-depth analysis of the dairy value chain and a roadmap for its sustainable transformation, framed around the three dimensions of sustainability economic, social and environmental.

The analysis applies a structured, multi-dimensional assessment methodology based on the FAO Sustainable Food Value Chain Development (SFVCD) framework and the EU Farm-to-Fork strategy. Evidence was gathered from a wide range of sources, including official statistics, policy documents, technical studies, and extensive fieldwork comprising 5 focus groups and stakeholder interviews. Sustainability performance was evaluated across 16 indicators, aggregated under three main pillars. The findings point to moderate economic performance (score 3), but low social (score 2) and environmental (score 2) sustainability, revealing major challenges that require systemic policy intervention.

Economically, while the sector remains a significant contributor to food supply and employment, profitability is generally low, especially among smallholders. Despite some modernization in large-scale farms and processing plants, most farms remain small (96% with fewer than five cows), under-capitalized, and disconnected from formal value chains. Access to finance is constrained by high interest rates and lack of collateral, while public investment programs often bypass the most vulnerable producers due to administrative complexity and co-financing requirements.

Socially, the dairy chain is marked by inequality, informality, and limited institutional support. Small farmers are often price takers, working without formal contracts or bargaining power. Work conditions are poor, relying heavily on unpaid family labor particularly women and elderly and are characterized by long hours and lack of social protection. Gender and youth inclusion are also weak, with limited opportunities for leadership or innovation. Food safety remains a critical issue: nearly half of milk sold in Albania bypasses official controls, raising serious public health concerns. While large processors comply with safety standards, informal and unregulated markets dominate the rural landscape. Meanwhile, cultural assets such as traditional cheeses and pastoral practices persist, but are increasingly at risk due to rural depopulation and limited institutional recognition.

Environmentally, the dairy sector's footprint is substantial and poorly managed. GHG emissions are high due to low-yield livestock and inefficient feeding practices. Manure is frequently mismanaged, contributing to water and soil contamination, while pasture degradation and biodiversity loss are accelerating due to neglect and abandonment of traditional systems. Formal conservation of native breeds and agrobiodiversity is minimal. The sector also lacks investment in renewable energy and resource-efficient technologies, even among large operators.

These findings point to a fragmented, increasingly polarized dairy value chain. While a small number of larger, modernized farms and processors are achieving gains in efficiency and market access, most of the producers remain excluded from these benefits, operating in a low-margin, low-productivity trap. This dualism threatens the long-term resilience of the sector and undermines national goals of inclusive and sustainable development.

To respond to the systemic challenges outlined in the analysis, the policy paper puts forward a coherent and actionable set of policy recommendations. These are fully aligned with the strategic priorities of Al-

bania's 2021-2027 Strategy for Agriculture and Rural Development and Fisheries (SARDF) and the guiding principles of the European Union's Common Agricultural Policy (CAP).

At the core of the proposed interventions is the commitment to inclusive modernization. This means investing in the infrastructure, equipment and herd varieties improvement needed by small and medium-sized farms, which are currently excluded by the modernization wave. By implementing targeted financial support accessible to these producers, the aim is to raise productivity, quality and resilience across the base of the sector not just among a privileged few.

Equally important is the need to strengthen governance along the dairy value chain. This includes fostering the development of cooperatives and producer groups that can improve farmers' bargaining power and reduce transaction costs. More robust contract enforcement mechanisms are also needed to shift the sector from informal, short-term transactions toward long-term, trust-based relationships that incentivize quality and investment. Support for formalization must go hand-in-hand with legal and fiscal reforms that ensure a level playing field between informal operators and tax-compliant businesses.

Food safety and animal health remain critical areas for improvement, particularly for the vast number of small-scale and informal producers who currently fall outside effective regulatory oversight. The paper therefore calls for enhanced veterinary and food safety services, including training, infrastructure, and systematic inspections, to protect public health and build consumer trust both domestically and for potential exports.

Recognizing the financial constraints faced by most farmers, especially those without collateral or formal land titles, the policy document advocates for increased access to finance. This includes introducing risk-sharing instruments, promoting cooperative credit mechanisms and advancing reforms in land registration to unlock investment potential.

Environmental sustainability is another key pillar. The paper recommends promoting better manure management, expanding the use of renewable energy such as biogas and solar systems, and taking concrete steps to protect biodiversity, including the conservation of native livestock breeds and traditional pasture landscapes.

To support these transformations, the paper emphasizes institutional capacity building especially within extension services, rural advisory networks and inter-ministerial coordination mechanisms. Without strong institutions, even the most well-designed policies will fall short of delivering change on the ground.

Finally, the paper places social inclusion at the center of its vision. It calls for policies that empower women through access to assets, representation, and training; encourage the participation of young people in modern dairy enterprises; and ensure better working conditions and protections for rural laborers.

Together, these recommendations offer a roadmap for building a dairy sector that is economically competitive, socially inclusive and environmentally responsible, that can meet Albania's future development needs while fulfilling its European aspirations.

# 1. INTRODUCTION

Around the world, food systems are under pressure to deliver healthy diets, decent livelihoods and a livable planet at the same time. For Albania this challenge is acute: agriculture still employs a large share of the workforce, yet the sector must now align with the EU Green Deal and the Sustainable Development Goals (SDG), while coping with climate risks and market volatility. Within Albanian agriculture, the dairy industry is a strategic pivot. Milk and cheese are core to national diets and rural incomes, but production is dominated by thousands of small, low-productivity farms, informal trade, and processing plants that vary widely in technology and quality control. Fragmented supply chains, weak extension services, and rising input costs limit competitiveness, while manure management, packaging waste, and high enteric-methane intensity raise environmental concerns. Modernizing dairy therefore offers a highly visible test case for moving the whole food system toward economic viability, social inclusion, and ecological sustainability.

The policy document represents a sustainable contribution from CSOs sector as well as farmers for healthy people, healthy societies and a healthy planet. It provides input and contribution to help policy making processes to effectively address the challenges of sustainable food systems. The policy paper aims to provide the appropriate guidelines, principles, and strategic directions to move toward green and just transition as regards dairy sector in Albania. Its aim is to show how the sector can create more income and secure nutrition without degrading natural resources or excluding vulnerable groups. Focusing on dairy is justified by the facts that dairy plays a vital role in Albania's rural economy, contributing significantly to farm income and employment across the countryside. Beyond its economic weight, dairy products like milk, yogurt and white brined cheeses are everyday dietary staples, making their quality, affordability, and safety key to public health. As Albania advances toward the EU integration, aligning with EU food safety, environmental and climate standards is becoming not just a regulatory requirement, but a gateway to export markets and eligibility for future CAP support. Enhancing the dairy sector is therefore both a pressing development priority and a long-term strategic investment in the country's European future.

To translate this ambition into actionable steps, the policy document outlines three key objectives. First, it provides a comprehensive analysis of the current dairy value chain, examining production volumes, key actors, and product flows from farm to fork. Second, it assesses the sector's sustainability performance: economic, social and environmental through a transparent 1-to-5 Likert scale based on FAO principles. Third, the paper identifies critical policy gaps and offers concrete policy solutions to build a more resilient and sustainable food system, aligned with Albania's broader agricultural reform and rural development agenda.

# 2. METHODOLOGY

This policy paper applies a structured, evidence-based methodology to assess the sustainability performance of Albania's dairy value chain and propose policy interventions for improved outcomes. The approach is grounded in two internationally recognized frameworks: the FAO SFVCD) principles and the EU Farm to Fork Strategy. These provide a conceptual and operational basis for linking sustainability measurement with system-level understanding and practical reform.

## 2.1 ANALYTICAL FRAMEWORK

The assessment framework draws on the principles of the FAO SFVCD approach, which are grouped into three main blocks:

- Performance measurement - evaluates current outcomes in the economic, social and environmental dimensions of sustainability. This corresponds to Principles 1-3 of the SFVCD approach. A set of 16 first-order indicators was selected to represent key outcome areas such as profitability, food safety, gender inclusion, and environmental risk.
- Understanding system performance - investigates the underlying factors that explain the observed performance, based on Principles 4-6. These include value chain structure and linkages, governance arrangements (e.g., contracts, power imbalances, incentive structures), and end-market dynamics (e.g., consumer preferences, price trends, trade flows).
- Policy intervention design-formulates a set of actionable, evidence-based interventions aimed at delivering "triple bottom line" outcomes: economic viability, social equity, and environmental sustainability. This phase is aligned with Principles 7-10, focusing on strategic upgrading, scalability, multistakeholder action, and vision-setting. All proposed interventions are screened against Farm-to-Fork objectives, including climate mitigation, biodiversity protection, food safety and fair pricing.

From which we considered only the first and the third one. The phase "Understanding system performance" is not subject of our analyses.

## 2.2 DATA COLLECTION

A multi-source, mixed-methods approach was used to compile the evidence base.

The policy document is mainly based in the National Report: Participatory Consultation and Dialogue to Strengthen the Farmers' Position in the Value Chain published by the ANRD (2025), which draws upon six distinct categories of data sources.

- Official statistics from INSTAT, FAOSTAT and EUROSTAT were used to quantify sector size, productivity, employment, and trade performance.
- Policy and strategic documents, such as SARDF, and the CAP Strategic Plan guidance, provided institutional and regulatory context.
- Academic and technical studies, including reports from FAO, AASF, ANRD and MARD, offered additional insight into dairy sector structure, sustainability indicators, and past performance evaluations.
- Primary qualitative data was collected through 5 focus group discussions and semi-structured interviews conducted in 2023-2024. Participants included dairy farmers, processors, cooperatives,

extension officers, and representatives of local government. Fieldwork was conducted in collaboration with ANRD to ensure regional representativeness.

- Industry data was extracted from processor websites, ISO quality certifications, and private sector reporting (e.g., Lufra, Erzeni), capturing market positioning, investment levels and standards adoption.
- Development project evaluations, including from GIZ and Agency of Italian Cooperation and Development, provided practical examples of donor-led interventions and lessons learned, particularly on pilot activities such as GI labelling and agri-tourism linkages.

## 2.3 DATA ANALYSIS

The analytical process was structured in three stages to align with the methodological framework:

(i) Sustainability scoring (refer to 9.3. Sustainability scoring tables for scoring method): Each of the indicators was assessed against a 1-5 Likert scale, based on predefined criteria drawn from FAO methodological guidance and adapted to the Albanian context. Scoring covered four economic indicators (e.g., profit, jobs, tax contribution, food supply), seven social indicators (e.g., labor conditions, nutrition, gender/youth inclusion, animal welfare), and five environmental indicators (e.g., GHG emissions, biodiversity, waste, toxicity).

The indicator-level results were aggregated into a single composite score per sustainability pillar:

- Economic: Score 3 (Moderate);
- Social: Score 2 (Low);
- Environmental: Score 2 (Low).

These ratings were further cross-validated through expert review and used as entry points for system-level diagnosis.

(ii) Root-Cause and Systems Analysis: To understand why performance scores were at current levels, we employed:

- Value chain mapping: tracing flows of milk and dairy products from farm to consumer.
- Governance diagnostics: analyzing vertical coordination, contract types, power dynamics, and enforcement.
- Market and consumer analysis: examining price transmission, consumer preferences, and segmentation between formal and informal markets.

This analysis identified major systemic constraints: supply fragmentation, informality, lack of trust and bargaining power, and weak enforcement of food safety and environmental rules.

(iii) Triangulation[1] and Validation: To ensure robustness and coherence of findings:

- All scores were subjected to peer review with external researchers and practitioners.
- Narrative consistency checks were used to verify that scoring matched the body of evidence.
- Findings were compiled into a synthesis matrix (see Annex) linking indicator data with observed outcomes, explanations, and proposed interventions.

1 Triangulation refers to the use of multiple methods or data sources in qualitative research to develop a comprehensive understanding of the phenomenon being studied.

# 3. ANALYSES OF THE DAIRY VALUE CHAIN IN ALBANIA

Livestock farming, particularly dairy production, remains a cornerstone of Albania's agricultural sector, contributing approximately 40% to the total value of agricultural output. Dairy products, especially milk, not only play a central role in national food security but also represent a promising frontier for agri-food exports. Despite its economic weight, the sector is undergoing a period of transition marked by structural shifts, declining herd numbers, and uneven modernization across the value chain.

## 3.1. ECONOMIC SIGNIFICANCE AND EVOLVING TRENDS

Albania's dairy sector has experienced significant transformation over the past three decades. While improvements in productivity, especially yield per animal, have been notable, the total number of livestock has seen a steady decline. Between 2000 and 2023, cow herds fell by 48%, sheep by 31%, and goats by 36%. Even within the last five years, the decline has been sharp, with cow numbers dropping by 27%. Yet, due to advancements in animal nutrition, breeding, and technology, milk yield per animal has improved by over 125% since 1990, cushioning some of the impact from the declining animal population (ANRD, 2024),

Milk production, which peaked in 2017, has since entered a downward trajectory. From 2017 to 2023, cow milk production fell by 22%, sheep milk by 26%, and goat milk by nearly 20%. These trends reflect not only demographic challenges, such as aging rural populations and youth migration, but also systemic issues like limited investment access for smallholders and underdeveloped market linkages (ANRD, 2024).

The structure of dairy farming is largely fragmented. Approximately 96% of farms keep fewer than five cows, with most of these smallholders located in mountainous or hilly regions. Medium and large farms, although far fewer in number, tend to achieve higher productivity due to better access to mechanization, veterinary care, and investment capital. Fier and Tirana remain among the most important regions for milk production, although recent data shows a consistent decline in herd numbers even in these traditionally strong areas.

## 3.2.THE DAIRY VALUE CHAIN ORGANIZATION

The Albanian dairy value chain comprises various interconnected actors: farmers (small, medium, and large), milk collectors, processors, cooperatives, and retailers. Each tier contributes uniquely to the flow of milk and dairy products, yet coordination remains weak, especially between small farmers and downstream actors.

At the primary level, small farmers often lack basic infrastructure, such as hygienic milking systems or cooling tanks, and have limited understanding of food safety standards. As a result, their milk is often of lower quality and commands the lowest prices in the market (55–64 ALL per liter). These farmers frequently rely on informal marketing channels or direct-to-consumer sales, where price margins are higher, but quality and safety compliance is low.

Medium-sized farms are somewhat better equipped, often using milking machinery and refrigeration, enabling them to sell directly to processors. Large farms, with herds exceeding 100 cows, dominate in quality and scale. These enterprises produce over 7,000 liters per cow annually, follow rigorous hygiene protocols, and maintain stable contractual relationships with major processing companies.

Processing companies in Albania range from small, artisanal operations to large industrial factories. Small processing units, typically located in rural and mountainous regions, produce traditional cheeses and yogurt from sheep and goat milk, often without formal packaging or branding. Medium-sized processors are usually family-owned businesses that operate in peri-urban areas, offering a wider variety of products and occasionally running their own retail outlets.

Large processing factories have invested in state-of-the-art technology, pasteurization systems, and UHT milk lines. They maintain formal contracts with farmers, particularly large ones, stipulating quality parameters such as microbial load, somatic cell counts, and antibiotic residues. These companies also provide veterinary support and training to ensure a stable supply of high-quality raw milk. Some, like Erzeni and AGS, serve as role models by investing in collection centers, laboratory testing, and logistics infrastructure.

On the distribution side, dairy products reach consumers through supermarket chains, specialized dairy stores, bakeries, and neighborhood shops. While large processors dominate the supermarket segment with standardized, packaged goods, small and medium producers tend to supply informal markets or local outlets. In rural areas, short value chains, such as farm-to-door sales, remain common, though often unregulated.

## 3.3. GOVERNANCE, CONTRACTUAL RELATIONS AND FARMER-PROCESSOR DYNAMICS

Weak coordination and low levels of trust are persistent challenges in Albania's dairy value chain. Only about 44% of small farmers report having long-term relationships with processors. Instead, many prefer spot-market transactions, selling to whichever buyer offers the highest price at delivery. This short-termism undermines collective investment in quality improvement and logistics (ANRD, 2024).

In contrast, larger farms and processors benefit from more stable, contractual relationships that enable better planning and sustained investments. These contracts often include veterinary support, infrastructure upgrades (such as cooling tanks), and training. Yet even in these more formal relationships, small farmers remain "price takers," lacking the bargaining power needed to negotiate favorable terms.

Cooperatives offer a promising solution to this power imbalance. Through aggregation, cooperatives can reduce transaction costs, standardize milk quality, and improve bargaining capacity. A notable example is the farmers group Myzeqeja Farm, which collaborates with the Erzeni Company to supply milk that meets safety and hygiene standards. By functioning as a unified entity, the cooperative ensures consistent volume and quality, while the processor benefits from reduced collection and quality control costs.

## 3.4.SUPPORT MEASURES AND PUBLIC INVESTMENT

Recognizing the strategic importance of the dairy sector, the Albanian government has implemented various support schemes. Between 2019 and 2024, national budgetary support focused primarily on subsidizing registered livestock herds. Farmers with at least 10 cows or 100 small ruminants were eligible for per-head payments of up to 10,000 ALL and 1,200 ALL respectively, with support capped per entity. However, support for milk deliveries to processors was discontinued in 2020 (ANRD, 2024).

In 2024, a more investment-oriented approach was introduced. The Ministry of Agriculture and Rural Development launched schemes co-financing the construction of animal housing and the purchase of modern equipment. These programs cover up to 50% of investment costs, with ceilings of 15 million ALL for facilities and 5 million ALL for equipment. The goal is to enhance productivity and sustainability through modernization, especially in medium and large farms.

Despite these positive steps, smallholder farmers continue to face barriers to accessing public support due to administrative complexity, lack of co-financing capacity and limited technical assistance.

# 4. NATIONAL POLICY AND STRATEGIC FRAMEWORK OF AGRICULTURE AND RURAL DEVELOPMENT

Albania's agricultural sector plays a vital role in ensuring food security, supporting rural livelihoods, and contributing to national economic development. Recognizing this strategic importance, the Government of Albania approved the Strategy for Agriculture and Rural Development and Fisheries (SARDF) 2021-2027, which provides the overarching policy and investment framework to modernize the sector, promote sustainable rural development, and align with the EU CAP. This section summarizes the national legal and strategic context as a basis for the policy analysis presented in this paper, focusing on sector challenges, development priorities, and the evolving role of institutions and support instruments.

## 4.1. STRATEGIC VISION AND CORE OBJECTIVES

The Strategy for Agriculture and Rural Development 2021–2027 articulates a forward-looking vision for a competitive, resilient, and sustainable agricultural sector that can drive economic diversification, reduce rural poverty, and contribute to EU integration.

Its overarching goals include:

1. Strengthening the competitiveness and modernization of agriculture and agro-processing, through improved infrastructure, technology adoption, market integration, and better organization of producers.
2. Promoting rural development and improving quality of life in rural areas, including support for basic services, rural entrepreneurship, and agrotourism.
3. Ensuring sustainable use of natural resources and environmental protection, particularly with respect to land, water, and biodiversity.
4. Improving governance and institutional capacity, focusing on service delivery, digital tools, monitoring systems, and policy implementation capacity.

The SARDF outlines six strategic priorities and twenty corresponding policy measures covering the entire agriculture and rural development landscape, from production support and farm investments to public services and socio-economic inclusion.

## 4.2. LEGAL AND INSTITUTIONAL FRAMEWORK

The development of Albania's dairy sector is shaped by a consolidated legal and strategic framework that supports agricultural modernization, rural development, and EU integration. As mentioned above, the key reference document is SARDF 2021-2027 (approved by DCM No. 460, dated 29.06.2022), which provides the policy vision for enhancing competitiveness, improving food safety, and increasing rural incomes, objectives highly relevant for the dairy sector.

The Strategy identifies dairy farming and processing as priority subsectors for support due to their contributions to employment, food security, and rural livelihoods. It emphasizes the need to invest in farm infrastructure, milk collection and quality control systems, veterinary and food safety standards, and producer organization development. These priorities are aligned with EU CAP 2023–2027 pillars and the Green Agenda for the Western Balkans, particularly in fostering sustainable livestock production, reducing emissions, and improving animal welfare.

The legal framework includes a range of laws and regulations governing dairy production, input use, veterinary services, food safety, organic certification, and land management. Law No. 9817/2007 on Agriculture and Rural Development forms the backbone of support schemes, while Law No. 9863/2008 on Food and Law No. 10465/2011 on Veterinary Services are critical for milk safety and animal health regulations. Complementary legislation on land use, organic production, and agricultural cooperatives also affects the dairy sector's structure and capacity for market integration.

Institutionally, the Ministry of Agriculture and Rural Development (MARD) leads policymaking, while ARDA implements support schemes, including grants co-financed through IPARD III. The National Food Authority (AKU) and regional veterinary services ensure compliance with hygiene and health standards, which are essential for upgrading Albania's dairy value chain.

This framework enables targeted interventions to modernize the dairy sector and align it with EU quality, sustainability, and competitiveness standards. The relevant legal and strategic references are listed in Annex 9.1. Core Legal Framework Relevant to the Dairy Sector and 9.2. Strategic Documents Related to the Dairy Sector

## 4.3. ALIGNMENT WITH THE EU COMMON AGRICULTURAL POLICY

A central pillar of the Strategy is Albania's progressive alignment with the CAP 2023–2027, in anticipation of future EU membership. Strategy draws upon the CAP's structure, principles, and policy instruments, aiming to build the foundations for full integration into the EU's agricultural governance system.

Key alignment features include:

- Pillar I - Direct support: While Albania does not yet operate full-scale CAP-style direct payments, the Strategy introduces direct support instruments and subsidies that mirror the CAP's income stabilization objectives. Future alignment envisions environmental and social conditionality, cross-compliance, and strengthened targeting mechanisms.
- Pillar II - Rural development: The Strategy's core architecture mirrors EU rural development programming, focusing on investments in physical assets, environmental sustainability, business diversification, and community-led local development.
- Green architecture: The Strategy incorporates climate and environmental conditionality into public support measures. This includes agri-environmental schemes, sustainable water use, and soil management, in line with the European Green Deal and Farm to Fork strategy.

The Instrument for Pre-Accession Assistance in Rural Development (IPARD III) is Albania's main vehicle for implementing EU-aligned measures. The Strategy commits to improving IPARD fund absorption, reinforcing monitoring systems, and upgrading institutional capacities required for managing EU funds.

## 4.4 STRATEGIC COHERENCE WITH THE POLICY DOCUMENT OBJECTIVES

The policy paper aims to support more effective policymaking by identifying bottlenecks, prioritizing high-impact interventions, and strengthening the link between strategy and action. SARDF 2021-2027 provides a robust strategic anchor for this process. This policy paper builds on the Strategy's framework to:

- Prioritize investments and reforms that accelerate competitiveness and market integration, including support for selected value chains, infrastructure, and farmer organizations.
- Propose measures that enhance the inclusiveness and sustainability of rural development, aligned with the Strategy's goals of reducing rural poverty, stimulating entrepreneurship, and improving public service delivery.

- Support institutional innovation, with recommendations for governance improvement, better use of data and evidence, and participatory planning mechanisms.

The Strategy's integrated and multisectoral approach is mirrored in this policy paper's assessment methodology, which examines how economic, environmental, and social objectives can be pursued simultaneously through targeted interventions.

## 4.5. CROSS-CUTTING THEMES AND FUTURE DIRECTIONS

The Strategy is underpinned by several cross-cutting themes, which are also addressed in the policy paper:

- Digitalization and innovation: The Strategy calls for upgrading data systems, adopting precision farming technologies, and digitizing extension services. These priorities are echoed in the policy paper's emphasis on smart solutions and digital transformation of rural services.
- Climate resilience and environmental protection: The Strategy promotes adaptation to climate change, integrated water management, and sustainable land use. The policy paper reinforces these objectives through criteria that prioritize environmentally beneficial interventions.
- Social inclusion and youth engagement: The Strategy explicitly targets women, youth, and vulnerable rural populations. The policy paper assesses how existing and proposed measures perform in terms of equity and empowerment, with attention to employment, migration, and demographic dynamics.

The SARDF 2021-2027 represents Albania's roadmap toward a modern, inclusive, and sustainable agricultural sector aligned with EU policies. It lays out clear objectives, institutional roles, and implementation tools to transform rural areas and prepare for EU accession. This policy document builds directly on that strategic foundation, offering evidence-based insights and practical recommendations that can further operationalize national goals. The close integration between this policy analysis and the Strategy's vision ensures consistency, supports policy coherence, and contributes to a more efficient and accountable policy process for agriculture and rural development in Albania.

# 5. PERFORMANCE OF FOOD SYSTEM - DAIRY CASE

## 5.1. SUMMARY OF SUSTAINABILITY EVALUATION

The table below presents a concise summary of the sustainability evaluation for Albania's dairy value chain, covering its economic, social, and environmental pillars. Using the project's 1-to-5 Likert scale (Very Low = 1 to Very High = 5), each dimension receives a headline score backed by key evidence drawn from recent literature and field findings (MARD 2021; ANRD 2024; AASF 2018; Milk Sector Study, IPARD reviews). This scorecard is meant as an at-a-glance baseline snapshot; a detailed discussion of results and drivers for each sustainability dimension will follow in the next sections.

Table 1: Summary of sustainability evaluation by dimensions

| INDICATOR | ASSIGNED SCORE | JUSTIFICATION / EVIDENCE |
|---|---|---|
| Economic dimension of Albania's dairy value chain | 3 - Moderate | Profitability:: Median 2022 gross margin is only 37 000 ALL/mo (≈ €370) per full-time farmer—about 64 % of the national wage—while mean profit rises to 74 843 ALL (≈ €624). Smallholders earn thin margins whereas large farms average 2.51 million ALL (≈ €20 900) a year, reflecting strong scale economies; processors also operate on tight spreads (FAO 2023; MARD 2021). Main reasons is feed costs and low scale of production In addition, the low capital intensity of production resulted in low productivity, relatively high production costs and low profitability, which in turn prevents the accumulation of capital for new investments, thus perpetuating the low production and productivity levels on many dairy farms (AGT DSA 2021)<br><br>Incomes & Jobs: Dairy still involves a substantial part of rural households, yet for the majority it delivers modest, volatile cash income; subsistence farms rely on self-consumption or off-farm earnings, and median wages remain two-thirds of the national average. Employment is steady, in part because labour exits are offset by herd consolidation—but offers limited upward mobility (ANRD 2024).<br><br>Tax Contribution: A sizeable informal segment of small dairies and traders avoids VAT, shrinking the fiscal base and distorting competition, even as large processors comply and invest. Partial formalisation is emerging via IPARD-backed upgrades and long-term supply contracts, but the overall tax take remains low (MARD 2021).<br><br>Food Supply: Domestic production still covers > 99 % of fluid-milk demand and per-capita consumption is among Europe's highest, yet total output has fallen 22 % since 2017. Albania now posts a record -120 kt dairy trade deficit as imports of milk powder and UHT milk grow, signalling competitiveness gaps (FAOSTAT 2022).<br><br>Taken together, businesses remain viable and supply is stable, but profitability, investment, and formalization are limited. matching the 'Moderate' level. |

| INDICATOR | ASSIGNED SCORE | JUSTIFICATION / EVIDENCE |
|---|---|---|
| Social dimension of Albania's dairy value chain | 2 - Low | Added value distribution & bargaining power: Highly fragmented chain leaves smallholders price-takers; late payments and oral deals are common (ANRD 2024).<br><br>Worker rights & safety: A significanty number of rural population depends on largely informal family labour; long hours, no social protection, rising labour scarcity and drudgery (AASF 2018; Field interview 2024).<br><br>Nutrition & health:~50 % of milk bypasses safety controls, posing contamination risks despite partial improvements in formal plants (ANRD 2024; AASF 2018; MARD 2021).<br><br>Cultural traditions: Strong heritage (transhumance, regional cheeses) still intact but threatened by rural depopulation and food-safety tensions (AASF 2018; MARD 2021).<br><br>Gender & youth inclusion: Women under-represented in ownership/leadership; youth engagement low, with many exiting farming (ANRD 2024; Field interview 2024).<br><br>Animal welfare: Minimum standards exist but are inconsistently applied; housing and veterinary care often poor (AASF 2018).<br><br>Institutions: Extension weak; enforcement of food safety and labour rules limited, though frameworks exist (ANRD 2024).<br><br>These factors indicate limited social equity, protection and inclusion, consistent with a **'Low'** sustainability level. |
| Environmental dimension of Albania's dairy value chain | 2 - Low | Carbon footprint: High GHG intensity per litre (low-yield cows), no mitigation or renewable-energy uptake; awareness exists but action is minimal (MARD 2021).<br><br>Soil conservation: Over-/undergrazing and land abandonment threaten pasture health; monitoring is weak (IPARD linkage to pasture decline). Biodiversity: Native breeds, mountain-meadow forages and open-land species are in decline; conservation programmes and breed registries are scarce (ANRD 2024).<br><br>Food loss & waste: Packaging waste from plastic pouches/Tetrapak is rising, with no recycling infrastructure or sector measures (IPARD guidelines).<br><br>Toxicity: Pesticide use is modest but antibiotic-residue risk is high; testing is infrequent and AMR concerns are largely undocumented (ANRD 2024).<br><br>Collectively these issues show limited progress and weak enforcement, positioning the environmental performance at the Low level |

Scores are based on a 1-5 Likert scale from Very low (1) to Very high (5) sustainability, per the defined methodology. This assessment focuses on current performance outcomes as a baseline, without analyzing causes or policy remedies (to be addressed separately in Understanding system performance, which is not object of our analyses).

## 5.2 SUSTAINABILITY EVALUATION

In the following section, we analyse the performance of the dairy sector from three angles—economic, social, and environmental. We start with the economic side: analyzing the productivity, jobs, the dairy chain. Then we look at the social side, people and culture, including farm and factory work, food safety, rural traditions, and how fairly the benefits are shared. Finally, we look at the environmental side, how the sector affects nature, including greenhouse gas emissions, land use, biodiversity, and waste. Together, these three views give a clear picture of where Albania's dairy sector stands today and where the biggest improvements can happen.

### 5.2.1 ECONOMIC PERFORMANCE

**a. Farm profitability**

In 2022, the Albanian dairy sector reported a median gross margin of 37 000 ALL (≈[2]370 EUR) per full-time worker underscoring the sector's modest profitability. The mean gross margin was higher (74,843 ALL [≈624 EUR]). (FAO, 2023). In 2022 the profitability gap between herd sizes was striking: small farms earned an average gross margin of about 300,000 ALL (≈ €2,500) per farmer, with a median of 270,000 ALL (≈ €2,250); medium farms more  than doubled those figures, posting a mean of roughly 680,000 ALL (≈ €5,700) and a median[3] of 530,000 ALL (≈ €4,400); while large farms outperformed all others by an order of magnitude, registering a mean of 2,510,000 ALL (≈ €20,900) and a median of 1,940,000 ALL (≈ €16,200). These numbers, converted from the chart's "million ALL" units by multiplying each bar value by 100,000 and translated into euros at ~120 ALL/€, underscore how economies of scale heavily favor big operations, leaving smallholders with far slimmer margins despite the same market conditions.

The Albanian dairy sector shows modest financial improvements, with the average gross margin per full-time worker increasing from 60,719 ALL (≈506 EUR) in 2019 to 74,843 ALL (≈624 EUR) in 2022. However, this growth was largely price-driven, as milk prices rose by 33% (from 40.2 ALL/L [≈0.35 EUR] to 55,9 ALL/L [≈0.047 EUR]), while production costs surged by 30%. Small and medium farms saw only marginal gains, whereas large-scale operations benefited disproportionately their gross margins skyrocketed from 177,061 ALL (≈1,475 EUR) to 250,800 ALL (≈2,090 EUR), highlighting worsening inequality in the sector. Despite higher nominal earnings, smaller farmers remain at a severe disadvantage, struggling with stagnant herd sizes (+0.83 cows/farm) and squeezed profitability. Without policy intervention, this trend threatens to push smallholders out of the market, concentrating gains among a few large producers (FAO, 2023).

Table 2: Monthly median gross margin per full employment dairy farmer and the ratio to national average wage

| | MEDIAN/ MONTH | NATIONAL AVERAGE WAGE | RATIO TO NATIONAL AVERAGE WAGE |
|---|---|---|---|
| | ALL | | |
| Monthly median gross margin in 2022 | 37,000 | 57,635 | 64% |
| Monthly median gross margin in 2019 | 30,322 | 57,635 | 53% |

*Source: FAO (2023)*

2 Approximately.

3 The median is the number that lies in the middle when all the values are arranged from the smallest to the largest, without taking into account the influence of extreme values.

Overall, these signs point to marginal profitability, especially in extensive systems. More modern farms can be somewhat more profitable due to better scale and efficiency, but they are also constrained by Albania's small market and price ceilings. Processors appear relatively more profitable (many have expanded and invested), but even they face tight margins, partly because they must pay high prices to incentivize supply from large farms and compete with low-cost imports (MARD, 2021).

The differential in profitability has pushed small farmers either to go out of business or reduce the activity size. In Albania dairy farming a farm consolidation is taking place. A 2022 interview with a mid-sized farmer illustrated this economic pressure: facing higher feed and labor costs, he reduced his herd from 12 cows to 5 to minimize losses (Field interview, 2022, by the author)

*Sales incomes*

Income from dairy farming varies widely by farm size and market access: Subsistence farms (1-2 cows) earn minimal cash income, as most milk is self-consumed. Sales are limited (a few liters/day) and provide only supplemental income (AASF, 2018). These households often depend on other sources like crops, remittances, or off-farm work. Medium-sized farms (6–10 cows) can generate a more significant share of household income, particularly those supplying urban markets or large processors. These producers tend to see better returns (AASF, 2018). Sheep/goat milk fetches higher prices per liter than cow milk, but total income is limited by low volumes. It provides a niche income for pastoral households rather than a primary livelihood (AASF, 2018). For most smallholders, dairy income is unstable. Farmers are price-takers, with raw milk prices fluctuating seasonally or due to supply gluts. They have little protection or buffer. (ANRD 2024) consultations highlight that many small producers face income volatility and vulnerability due to price swings and lack of formal contracts. In spring flush periods, prices often dip, squeezing margins. Farmers with formal contracts tend to experience more stable incomes, with regular monthly payments and sometimes quality-based premiums (ANRD, 2024). Large commercial farms benefit from economies of scale and can reinvest profits, paying themselves decent wages. But for typical village households with one or two cows, dairy serves as a livelihood supplement, not a reliable path out of poverty. The sector's fragmentation closely aligns with rural poverty patterns.

*Access to finance*

Investment along the dairy value chain has been highly uneven, substantial in a limited number of cases, but minimal for the majority. Historically, commercial banks have shown little interest in lending to agriculture. A 2018 study by AASF highlighted the difficulties cooperatives and farmers face in accessing credit. For example, the group of farmers Myzeqeja Farm was only able to purchase a tractor by having individual members take out loans at a 24% interest rate, as banks were unwilling to extend credit to the cooperative as a legal entity (ANRD, 2024).

Two major barriers continue to hinder on-farm investment: high interest rates and the lack of acceptable collateral, particularly due to unclear or unregistered land titles.

Under national support schemes, dairy farmers who met specific eligibility criteria—such as owning at least ten cows qualified for per-head subsidies or 50% co-financing for investments in infrastructure and equipment (ANRD, 2024). Through IPARD II (2014–2020), funding was provided for 13 dairy production projects and several processing upgrades (MARD, 2021). Notably, 40% of beneficiary farms received 68% of the total IPARD funding, with each investing around €0.5 million in large-scale improvements (MARD, 2021). These investments allowed for the construction of modern barns, installation of milking parlors and cooling tanks, and upgrades to feeding systems. As a result, some farms reached EU standards in food safety and animal welfare, positioning themselves as reliable suppliers to leading processors (MARD, 2021).

In 2024, the MARD introduced an investment scheme aimed at increasing productivity and promoting sustainable rural development. This scheme includes two measures that directly impact the dairy sector: the construction of facilities for raising cows, sheep, and goats, and the purchase of equipment and machinery to modernize livestock farms. Each measure provides 50% coverage of the tax invoice for the respective investments.

These support schemes are designed to equip farmers with financial resources and modern technology, enhancing both the quality and quantity of production while simultaneously contributing to improved rural livelihoods and sustainable economic growth.

However, most smallholders received little to no support. Many relied on minor self-funded improvements or remained unchanged. This disparity has resulted in a polarized sector: a small group of well-capitalized farms are rapidly modernizing and becoming more competitive, while most small farms remain unable to invest or grow due to limited financial capacity.

**b. Coordination and contracts**

Vertical relationships in the chain range from informal spot transactions to formal contracts. Most small farmers lack written contracts, selling milk daily to collectors or local dairies based on oral agreements (ANRD, 2024). This informal arrangement leaves farmers vulnerable there are no price guarantees or collection commitments, and payment delays are common.

Only larger farms and some organized groups tend to secure formal supply contracts. Medium and large processors often sign contracts with farms delivering high volumes and consistent quality, specifying collection schedules, standards, and payment terms (ANRD, 2024). For example, the Myzeqeja Farm holds a 15-year contract with Erzeni dairy, stipulating thrice-monthly payments for aggregated deliveries (ANRD, 2024). These contracts enhance predictability and cash flow for farmers.

However, such examples are exceptions. The norm remains a diffuse, informal chain: small farms selling to small dairies or traders with minimal paperwork. Trust-based relationships are common, but when disruptions occur (e.g., a collector stops buying or drops the price), farmers have limited recourse.

In focus groups, farmers often mentioned power imbalances large buyers can dictate terms to individual farmers who lack alternatives (ANRD, 2024). Where they exist, cooperatives have strengthened farmers' bargaining power. Members report slightly higher and more stable prices due to collective negotiation (ANRD, 2024).

Overall, the chain is bifurcated: a formal segment with tighter contracts and standards (involving larger farms and processors), and an informal segment where transactions are ad hoc and largely undocumented.

*Market concentration*

On the processing side, the industry has undergone partial consolidation and modernization. A few large dairy companies (Erzeni, Lufra as market leaders) dominate branded dairy sales and have invested significantly in capacity and technology (MARD, 2021). IPARD analyses found that major dairy plants operate at only 50–60% of their capacity, reflecting excess processing capability (MARD, 2021).

This underutilization is due to limited access to high-quality milk, as processors are constrained by the fragmented supply base and informal sector competition. Nonetheless, large processors are running near EU-level efficiency in anticipation of future demand growth (MARD, 2021).

In contrast, numerous small dairy shops still serve local markets with traditional cheeses and yogurt. They compete by sourcing milk from the same small farmers, often accepting milk which does not respect basic standards (uncooled, higher bacterial counts) and offering slightly lower prices. The coexistence of modern dairies and traditional cottage producers is a defining feature of Albania's dairy market structure.

*Added value and reinvestment*

At the processing level, a few leading firms have also been major IPARD beneficiaries, accounting for 75% of all dairy processing investment projects under IPARD II (MARD, 2021). These companies expanded processing lines and/or installed wastewater treatment facilities – a first in the industry (MARD, 2021). These investments suggest confidence in the sector's future by the most competitive players. However, overall reinvestment in the value chain remains limited due to modest profits. Many small dairies operate semi-formally to avoid taxes, surviving on thin margins. Formal companies report that the VAT regime is unfavorable. They pay VAT on input and milk purchases, while informal competitors do not, creating market distortions (MARD, 2021).

The low capital intensity of production for both dairy cattle and small ruminant farms resulted in low productivity, relatively high production costs and low profitability, which in turn prevents the accumulation of capital for new investments, thus perpetuating the low production and productivity levels on many dairy farms (MARD, 2021).

This lack of a level playing field undermines sector-wide profitability. As a result, the dairy sector's contribution to GDP and tax revenue is lower than its output would suggest, with a significant portion of the chain untaxed or underreported.

*Farm's structure*

Albania's dairy farming is characterized by extreme fragmentation. Most producers are smallholders with only a handful of animals. Surveys indicate that over 50% of dairy farms keep just 1-3 cows (AASF, 2018). According to the 2018 AASF study, roughly 60% of cattle-keeping households have a single cow, mainly for subsistence use (AASF, 2018). Only 8% of cattle farms have 5 or more cows (AASF, 2018), and truly large dairy operations (e.g. commercial farms with >100 cows) are very few.

Recent consultations confirm this persistent structure: about 96% of farms have fewer than 5 cows (ANRD, 2024), and many of those are informal backyard producers selling raw milk locally. Such fragmentation limits aggregated supply and makes collection logistics challenging. It also means that Albania's dairy herd is spread across tens of thousands of small farms, often lacking the capital and know-how for expansion.

There is a gradual polarization underway on one hand, a handful of larger farms and cooperatives are consolidating animals and investing in modern barns; on the other, many small farmers are aging out or shifting away from milk production. For instance, interviews in 2022 in a dairy-growing village reported the number of families keeping cows plunged from 350 to just 70 over recent years, as many smallholders sold off their animals due to low profitability and labor shortages (Field interview by the author 2022).

At the same time, a few investors have been scaling up commercial herds—for example, one farmer took over others' cows and grew to 120 cows plus a small processing plant (Field interview, by the author 2022). These dynamics point to a slow restructuring: while the average farm remains very small, the share of milk coming from larger, more professional farms is rising.

*Value chain organization and market structure*

The dairy value chain in Albania involves several tiers but is dominated by many small producers funneling into a relatively concentrated processing sector. Primary production is the domain of tens of thousands of smallholder farms (typically with fewer than 5 cows). Most produce milk partly for home consumption and sell any surplus either at the farm gate or to informal collectors (ANRD, 2024).

At the next stage, milk collectors and collection centers play a pivotal role. These intermediaries gather milk from scattered small farms often using simple trucks or cans without refrigerated tanks and deliver it to dairies. Some are independent middlemen; others are affiliated with processing companies.

There are also a limited number of cooperatives or farmer associations that bulk their members' milk. For example, the "Myzeqeja farm" cooperative in Lushnje has 60 member farmers and operates a milk collection center, selling exclusively to a large dairy processor under a long-term contract (Field interview, 2018). Such formal cooperatives are still rare but demonstrate the benefits of coordination. Myzeqeja members collectively negotiate prices and receive inputs at lower cost (Field interview, 2018).

On the processing side, there is a mix of small artisanal dairies and a few large industrial dairies. Estimates indicate that only 10–15 larger processors handle the bulk of formally marketed milk, with the two largest companies commanding significant market share (MARD, 2021). Notable large dairies (e.g., Lufra, Erzeni, Gjirofarma, and AGS) process tens of thousands of liters per day and operate modern pasteurization and packaging lines.

Meanwhile, hundreds of micro-dairies and cheesemakers are spread across rural areas, many operating semi-formally. Distribution and retail channels include green markets and roadside stalls (for raw milk

and farm-made cheese), local shops, and supermarkets in urban centers which carry the branded products of major dairies (ANRD, 2024).

**c. Tax contribution**

Albania's dairy sector contributes relatively little to the public purse because a large share of trade flows through informal channels: formal dairies shoulder VAT and compliance costs, whereas many small processors, collectors and kiosks do not, creating an uneven playing field and narrowing the taxable base (MARD, 2021). This "quasi-competition" has softened the sector's contraction by letting small farmers sell milk without expensive upgrades, yet it simultaneously slows formalisation and keeps turnover off the books (MARD, 2021). Regional fragmentation compounds the problem bulk, perishable milk is still marketed mainly within districts, where thousands of small outlets fall below tax-authority radar while stronger urban demand for branded, packaged products is only gradually expanding the formal VAT net. Looking ahead, if local productivity stalls and cheap EU UHT milk gains shelf space, Albania would collect VAT on imports but risk further hollowing out domestic processors, so the sector's overall tax contribution will remain well below potential until informality is curbed and efficiency rises.

**d. Food supply**

*Overall production of milk*

Albania's milk production (cow, sheep, and goat combined) showed a long period of growth in the post-transition era, followed by a recent downturn. Total milk output increased steadily from the early 2000s up through the mid-2010s (AASF, 2018). Cow milk, which accounts for about 85% of national milk volume, rose from roughly 807 thousand tons in 2000 to 975 thousand tons in 2016 (AASF, 2018). Small ruminant milk (sheep/goat) also grew modestly, from approximately 141 thousand to 170 thousand tons over the same period (AASF, 2018). This expansion pushed total milk production to an estimated 1.14–1.16 million tons by 2016–2017, a high point for the sector (AASF, 2018; ANRD, 2024).

Significant fluctuations in milk production have been observed over different periods, with both increases and declines. Between 1990 and 1996, total milk production rose by 50%, reflecting favorable conditions and improvements in agricultural practices. This growth was accompanied by yield improvements, as higher production levels were achieved despite the relative stability in livestock numbers. However, after peaking in 2017, total milk production began to decline, reaching a 22% reduction by 2023. Cow milk, the largest contributor to total production, decreased by 22%, while sheep and goat milk production declined by 26% and 20%, respectively. Despite these reductions, the increase in yield per animal indicates that productivity improvements have helped mitigate the impact of declining livestock numbers, reflecting advancements in farm techniques and herd management (ANRD, 2024)

*Livestock number*

A key factor in production trends is the shrinking livestock herd. The dairy sector underwent a sharp reduction in animal numbers in the post-1990s, and that decline has continued into recent years. In 2000, Albania had about 728,000 cattle (total headcount) according to INSTAT data (AASF, 2018). By 2016, cattle numbers fell to ~492,000 (AASF, 2018). Focusing specifically on milking cows: in 1996 there were an estimated 483,000 dairy cows, dropping to only ~232,000 by 2023 (ANRD, 2024). Sheep and goat flocks have likewise diminished (from ~3.0 million small ruminants in 2000 to ~2.9 million in 2016) (AASF, 2018), though their decline has been less severe than that of cattle.

Over the years, the dairy sector has undergone significant changes in terms of livestock numbers, production volume, and yield per head. Statistics indicate substantial declines in the number of livestock bred. From 2000 to 2023, the cumulative decrease for each category was 48% for cows, 31% for sheep, and 36% for goats. This downward trend has continued in recent years, with the period 2019-2023 showing a 27% decline in the number of cows, 20% in sheep, and 24% in goats .(ANRD 2024)

Despite having far fewer milking animals today, Albania managed to raise total milk output for many years through better productivity per animal.

### *Yields and productivity*

#### *Rising milk yields*

One of the notable performance improvements in the Albanian dairy chain has been the increase in milk productivity per cow. Through better animal genetics, feeding, and management, average yields have significantly improved from the low levels of the early transition period.

In 1990, a cow in Albania produced only about 1,398 liters/year (ANRD, 2024). By 2023, this had risen to ~3,157 liters per cow, a ~125% increase in yield (ANRD, 2024). AASF (2018) reported that yields climbed from ~1,100–1,200 L/year in the early 2000s to ~1,900–2,800 L/year by 2016, depending on the region and farming system.

Although Albanian yields still lag far behind Western European levels (e.g. EU cows often produce 6,000–8,000+ L/year), the steady upward trend is a positive performance marker (AASF, 2018). It reflects incremental efficiency gains farmers adopting improved breeds (through crossbreeding or importing high-yield cows), better feeding practices (hay, silage, some concentrate use), and basic veterinary care.

Larger farms have led the way: the highest yields are reported on modern dairies, some exceeding 6,000–7,000 L per cow annually by using Holstein-Friesian genetics and total mixed rations (ANRD, 2024). By contrast, the smallest backyard farms with local breeds may still get only ~1,000-1,500 L per cow. Sheep and goat milk yields have also seen modest improvements. Traditional ewes and does produce very low volumes (often <50 L/year decades ago); now even smallholders can get around 70-80 L per sheep and ~120+ L per goat per lactation (ANRD, 2024). These levels remain modest a reflection of short lactation seasons and extensive grazing systems but are slowly rising as some farmers use better genetics and supplemental feeding (ANRD, 2024; AASF, 2018).

#### *Drivers of productivity*

The gradual yield gains have been supported by several factors: (Breeding and Genetics: Artificial insemination in cattle is more common (though not universal), introducing higher producing breeds (AASF, 2018). Some progressive farms imported purebred stock, for example, an IPARD supported farm specialized in Alpine goats for higher milk yields (MARD, 2021). Feeding Practices: Modernized in larger holdings use of silage, cultivated alfalfa, and balanced feed has grown, boosting output per animal.

Investment Programs: Under IPARD II (2014-2020), at least five large dairy farms received substantial co-financing (~€0.5 million each) to build new stables, purchase machinery, and introduce high-yield cows (MARD, 2021). These farms reportedly achieved milk yields and quality on par with EU standards (MARD, 2021).

However, such examples remain exceptions. The majority of Albania's ~300,000 dairy cows are kept in resource-constrained, semi-subsistence conditions, so their productivity is far below potential. The average yield improvements thus signal slow diffusion of better practices.

It is also evident that productivity gains alone cannot sustain total output if the breeding herd continues shrinking. As noted, Albania's yield increases initially offset the declining cow population (hence production grew through 2016), but thereafter, production fell implying a plateau or limits in the current productivity growth without broader structural change.

#### *Seasonality and processing*

Productivity in Albania's dairy sector is also highly seasonal, especially for small ruminants. Sheep and goats produce milk only for a few months after lambing/kidding (typically spring through early summer), then dry off (AASF, 2018). Cow milk is more continuous but still peaks in spring and dips in winter on most farms due to reliance on pasture.

This seasonality affects processing utilization. Many micro dairies operate only seasonally (during sheep/goat milk flush). In addition, larger dairies try to even out capacity use by processing cow milk year-round and some small ruminant milk seasonally (AASF, 2018).Improving off-season productivity (e.g. through fodder conservation or staggered calving) remains an area of ongoing challenge.

*Domestic consumption and trade performance*

*High domestic consumption*

Albanians are heavy consumers of dairy, anchoring domestic demand. Per capita milk-equivalent consumption is estimated among the highest in Europe and well above the EU average (ANRD, 2024; MARD, 2021). This includes milk, cheese, yogurt, and other dairy products. Cheese holds cultural significance. The high per capita consumption of milk (excluding butter) underscores its vital role in the Albanian diet. As illustrated in Figure 1. Albania consistently records higher milk consumption levels than both the European Union and global averages throughout the 2010–2022 period. In 2022, the annual milk consumption in Albania reached approximately 298 kg per person, significantly surpassing the EU average of 218 kg and the global average of just 83 kg. These figures highlight milk as a key dietary staple in Albania, reflecting its nutritional significance and the strong presence of dairy in local food culture (FAO, 2025).

Consumers show a strong preference for fresh, local dairy. Surveys indicate many households prefer to buy raw milk directly from farmers or village markets, believing it to be more natural (ANRD, 2024). Similarly, artisanal cheeses from specific regions (e.g., Gjirokastër, Korça) are highly valued.

These preferences sustain a large informal market alongside the formal retail sector. Urban supermarkets stock UHT and pasteurized milk, factory-made cheeses, and some imported brands, but many consumers continue sourcing dairy through informal or familial channels.

Over 99% of fluid milk consumed in Albania is domestically supplied, with minimal UHT milk imports (AASF, 2018). Rural and peri-urban consumers especially trust local products, helping domestic producers maintain market share.

*Trade performance*

Albania consistently runs a dairy trade deficit, though imports remain moderate compared to domestic production. Imports typically include products that local production cannot match in quality or volume such as milk powder, UHT long-life milk, Butter, Specialty cheeses Albania's dairy sector shows a consistent and widening trade deficit, reflecting the country's structural dependence on dairy imports. According to FAOSTAT data presented in the Annex 9.4. Consumption and trade, dairy imports ranged from 49 to 98 thousand tonnes between 2010 and 2021, before sharply increasing to 110 thousand tonnes in 2022 the highest level recorded in the period. In contrast, dairy exports remained negligible, fluctuating only slightly between 6 and 8 thousand tonnes annually throughout the 2010-2022 period. This has resulted in a persistent negative trade balance, ranging from 84 thousand tonnes in 2010 to a peak deficit of 102 thousand tonnes in 2022. The data highlight the structural challenge facing Albania's dairy sector, which is unable to meet growing domestic demand through local production, leading to significant import dependency. Strengthening local dairy value chains and improving competitiveness are essential to reducing this external reliance.

While absolute import volumes are small (e.g., ~15,000 tons of fresh milk and ~1,500 tons of milk powder in 2020), they fill seasonal or quality-related gaps (MARD, 2021). Large processors increasingly use imported semi-processed inputs, such as bulk milk from Serbia and EU sourced milk powder, especially in winter or when local milk falls short (MARD, 2021).

Exports remain negligible, limited to small volumes to diaspora markets (e.g., Kosovo, U.S. Albanian communities). For example, only 34 tons of cheese were exported in 2016 (AASF, 2018). High production costs, inconsistent quality, and inability to meet foreign standards limit international competitiveness.

Thus, while Albania is largely self-sufficient in fluid milk, the dairy trade gap reflects a lack of competitiveness in processed dairy products. Closing this gap would require major efficiency gains and compliance upgrades to reduce imports or grow exports.

**Conclusion**: Albania's dairy sector remains economically fragile, marked by low and unequal profitability, fragmented farm structures, and limited formalization. While some large farms and processors have modernized and increased efficiency, most smallholders continue to operate under severe financial constraints, lacking access to finance, investment, and stable markets. The sector is increasingly polarized, with economies of scale favoring large operations and marginalizing smaller producers. Informality, limited reinvestment, and weak value chain coordination further hinder competitiveness. Despite gradual gains in productivity and strong domestic demand, shrinking livestock numbers and rising costs threaten sustainability. Without targeted policy reforms, Albania risks losing smallholder livelihoods and deepening its dependence on dairy imports to meet future food security and trade needs.

### 5.2.2. SOCIAL PERFORMANCE

**a) Added value distribution**

*Fragmentation and power imbalance*

The structure of Albania's dairy chain many small producers and few buyers leads to a value distribution skewed against farmers. Small farmers have little bargaining power and typically accept prices dictated by collectors or processors. According to the ANRD (2024) study, with over half of farmers owning just 1-3 cows, collective bargaining is minimal. Most milk is sold via intermediaries, often on terms set by the buyer. This creates a sense of marginalization and mistrust toward processors.

Late payments are a frequent issue. Focus groups (ANRD 2024) reveal that some processors, especially cash-strapped small dairies, delay payments for weeks or months, pushing financial risk onto farmers. In addition, most transactions are oral, lacking transparency on pricing or milk quality assessment.

*Role of farmer's groups*

Collective organizations have shown promise in improving farmers' conditions. While few, some dairy farmers groups and associations have emerged. Notable examples include Myzeqeja Farm in Lushnje (Field interview).

Where they exist, these groups offer tangible social and economic benefits. For example, Myzeqeja members: share equipment (e.g., tractor, milk storage), earn an estimated +32,000 ALL per cow per year more than non-members, due to better prices and lower input costs (Field interview, 2018), hold a 15-year supply contract with a major processor, ensuring thrice-monthly payments, meet every three months for problem-solving and transparency. Actually, they are facing difficulties because of the differentiated VAT: 20% when selling milk to consumers and only 6% when buying milk to farmers.

However, trust and leadership remain obstacles. Cultural hesitations rooted in Albania's history of forced collectivization persist (ANRD, 2024). Many producers prefer flexible, spot-market relationships over binding group commitments. To strengthen farmer organizations, these social barriers must be addressed alongside efforts to ensure good governance within cooperatives.

*Value added distribution*

At a broader level, the distribution of value-added in the dairy chain is unequal. Farmers receive a relatively small share of the final retail price, while processors and retailers capture a larger portion, particularly branded products. On a more positive note, some processors have begun implementing quality-based payment schemes, rewarding higher fat/protein content and lower bacteria counts (ANRD, 2024). This can improve income for farmers who invest in quality, but it may also exacerbate inequality, as those unable to meet standards risk being penalized or excluded from formal markets.

**b) Cultural traditions**

*Cultural traditions and consumer preferences*

*Cultural heritage*

Dairy farming especially small ruminant pastoralism is deeply embedded in Albania's cultural heritage. In mountain regions, the ancient practice of transhumance (seasonal movement of sheep and goats to summer pastures) has been maintained for centuries and remains a pillar of community identity (AASF, 2018). This system not only yields unique high-mountain cheeses, but also helps preserve cultural landscapes and biodiversity. Certain regional dairy products have become symbols of local pride and cuisine such as Gjirokastër's goat cheese and Korça's winter sheep cheese (AASF, 2018). These products enjoy strong local branding, often featured in festivals and fairs that celebrate traditional dairy. The persistence of these traditions is a positive social indicator, supporting cultural diversity, community cohesion, and rural identity.

*Consumer trust in tradition*

Albanian consumers show a strong preference for traditional, locally produced dairy. There is widespread skepticism toward industrial or imported alternatives. For example, the use of milk powder in cheese-making is frowned upon (AASF, 2018), with consumers valuing the authenticity of "real" milk-based cheese. This consumer trust has positive social effects because it supports small-scale producers, reinforces rural livelihoods and sustains traditional knowledge

However, this preference can sometimes conflict with modernization especially around food safety. Consumers choosing unpasteurized products for tradition's sake may unknowingly accept higher health risks.

*Changes and preservation*

With urbanization and greater exposure to imported goods, dietary habits are slowly changing. Younger, urban consumers are increasingly trying imported cheeses, flavored yogurts and branded dairy products. But still, traditional preferences remain dominant.

Because dairy holds deep cultural significance, development efforts should leverage rather than replace tradition. For example, promoting Geographic Indications (GIs) for famous cheeses and supporting eco-tourism or artisanal branding.

The cultural sustainability of Albania's dairy sector is relatively high traditional practices have survived decades of transition. However, IPARD notes a decline in transhumance due to rural depopulation (MARD, 2021). This erosion threatens unique dairy products, cultural identity, traditional ecological systems.

**c) Nutrition and health**

*Informal milk and risks*

One of the most critical social performance concerns in Albania's dairy sector is food safety. Due to the large share of informal milk handling, quality and safety controls are often bypassed. Estimates suggest that around half of all raw milk is sold directly from farms or via roadside vendors, without pasteurization or official quality testing (ANRD, 2024; AASF, 2018).

Common practices such as selling warm, raw milk in reused bottles expose consumers to risks from bacterial contamination (e.g., Brucella, E. coli) and antibiotic residues. Many small farmers do not test their milk for safety parameters. Systematic testing for antibiotics, bacterial counts, or somatic cells is rare on small farms (ANRD, 2024). Farm-level hygiene is inconsistent, with milking practices and under-care often below recommended standards.

Similarly, small artisanal dairies may not consistently pasteurize milk or properly age cheeses. Traditional cheeses sold fresh can carry pathogens if produced from contaminated milk. While public health data on dairy-borne illness is limited, the risk is well recognized.

Albania has a Food Safety Law aligned with EU standards, and the National Food Authority (NFA) is tasked with inspections. However, enforcement is partial, especially in rural areas where thousands of small producers operate with little oversight. Regulations require cooling tanks and veterinary checks, but many farms lack such facilities and are unfamiliar with hygiene standards (ANRD, 2024; AASF, 2018).

Today, the largest dairy processors typically meet EU food safety and quality requirements (MARD, 2021). These companies operate internal quality control labs. They reject non-compliant milk and offer quality-based pricing, rewarding milk with low bacterial counts

As a result, milk and dairy passing through formal channels is safer than it was a decade ago. IPARD assessments confirm that "milk and dairy products are safer than they were at the beginning of the previous programming period" (MARD, 2021). However, with half of milk still in informal channels, major risks persist.

*Public health outcomes*

Culturally, many Albanian consumers boil raw milk at home, which reduces but doesn't eliminate risk. Periodic public health concerns have arisen around brucellosis and other zoonoses linked to milk consumption. The government has invested in animal health control, including vaccination programs, brucellosis control and improved animal identification and traceability (MARD, 2021). These efforts have shown some success in disease reduction, but full benefits depend on further formalization of the supply chain.

**d) Worker rights and safety**

*Employment and livelihoods*

*Rural employment importance*

The dairy value chain is a cornerstone of rural livelihoods in Albania. Cattle, sheep, and goat rearing provide work and income for over 40% of the rural population (ANRD, 2024). This includes both full-time and part-time or subsistence farmers, many of whom keep only a few animals. The sector's social significance is immense it supports household food security (with families consuming their own milk) and provides cash income from milk sales.

In mountain and upland regions, where crop options are limited, small ruminant dairy and transhumance remain traditional livelihood activities. Despite small herd sizes, the cumulative livestock population forms a major rural employer, though labor is predominantly informal family labor. Few farms hire permanent workers; instead, husbands, wives, and sometimes children or elders perform most tasks (ANRD, 2024).

On the processing side, some formal jobs are generated, but these are concentrated in larger facilities. For example, one of Albania's largest dairy farms (350 milking cows) reported employing 37 full-time and 15 seasonal workers a rare case of substantial farm-level job creation (Field interview, 2018). AGS SHPK, Durres, Sukth, employed 65 full time workers (Interviews, 2024) This company is processing a volume of about; 270 000 litres of milk per month.

Most farms are not yet at this scale. Meanwhile, dozens of small dairy plants employ just a handful of people, often family members or a few staff.

*Labor shortage and conditions*

A growing concern is the shortage of farm labor, particularly among the younger generation. Many young people leave agriculture in search of better work opportunities. Farmers report increasing difficulty finding herders. "We have to book meetings with workers," one farmer said, describing a scenario where only 3-4 people were available in the area, with multiple farms competing for them (Field interview, 2024, ANRD).

This labor scarcity has driven daily wages up, from ~1200 ALL to 2000 ALL per day in a short period (Field interview, 2024). For small farms, paying such wages is often unaffordable, forcing aging family members to take on the labor or neglecting certain tasks. As a result, some farmers exit dairy farming altogether due to lack of help. While larger farms and processors create sought-after jobs (e.g., dairy plant workers, drivers), these opportunities are concentrated near peri-urban centers and are limited in number. The Albanian dairy sector is dominated by family labor, making formal labor regulations largely inapplicable. On small farms, men and women work long hours performing physically demanding tasks. Hand milking is still widespread, milk and feed transport is manual, and cleaning and animal care are done without

machinery. Moreover, family members lack social protections they don't qualify for health insurance or social security through their farm work. There are no formal working hours or rest periods; cows must be milked every day, regardless of circumstance. According to AASF (2018) and ANRD (2024), low mechanization forces workers to perform tasks that could be mechanized like fodder transport or manure removal by hand. This contributes to drudgery.

*Gender and youth inclusion*

Women are essential but underrecognized in Albania's dairy value chain. On small farms, women manage milking, calf care, cheese and butter production (ANRD, 2024). Despite their contributions, land and livestock ownership are usually registered to male family members. Women have limited access to credit, as they often lack collateral. In focus groups, only ~20% of participants were women (ANRD, 2024). Few women hold leadership roles in cooperatives. Most co-op boards are male-dominated, with long-serving male leaders (Field interview, 2018). This highlights a gender gap in formal representation. Some development programs (e.g., Heifer International) have supported women in dairy by providing livestock and training. These have empowered small groups of women, but at limited scale.

Youth participation in dairy is a growing concern. The average farmer age is high, and young people view dairy as labor-intensive, low-income and low prestige. In ANRD's focus groups, only ~21% of participants were under 40 (ANRD, 2024). Those who are involved tend to be open to technology and try improved breeds or new tools. Yet many young people express intentions to leave rural life, threatening the continuity of farms. Few younger entrepreneurs are entering dairy, though notable exceptions include intensive goat farms in the lowlands (MARD, 2021). Some programs offer agri-business training or startup grants, but the overall level of youth engagement remains modest.

**e. Animal welfare**

On most small farms, dairy cattle are kept in basic shelters and often tethered for long periods (AASF, 2018). Housing is minimal simple barns with poor bedding and ventilation. Movement is limited, which reduces animal comfort. Sheep and goats typically graze during the day and are penned at night, sometimes in cramped quarters. By contrast, larger commercial farms have invested in modern barns with better ventilation, free-stall housing, separate feeding/resting areas. Such facilities offer significantly improved welfare but remain rare.

Smallholders rely on grazing and homemade food adequate but not optimized. Water shortages on summer pastures can impair welfare. Veterinary care is sporadic; many farmers self-treat animals or delay calling a vet until emergencies arise. Traditional farms use natural mating and rarely cull animals, even unproductive ones due to cultural ties or limited markets. This results in aging, less productive herds. Larger farms use artificial insemination, which improves genetics, increases productivity and requires careful management to avoid inbreeding or difficult births (AASF, 2018). Use of AI is growing, but still not universal on small farms.

**f. Institutions**

*Institutional support and policy enforcement*

*Extension and training*

In Albania, public agricultural extension services exist, but are limited and under-resourced (ANRD, 2024) Many farmers particularly in remote areas do not receive regular assistance or technical training. According to ANRD (2024), many producers are unfamiliar with modern hygiene or milking practices. Where NGOs or external projects have engaged (e.g., Heifer International, World Vision), results have been positive such as farmer training in animal husbandry and business planning, support for cooperatives, improved dialogue with government (Field interview, 2018; ANRD, 2024). NGOs and farmer associations are playing an increasing role in bridging knowledge gaps, though coverage is still patchy

*Regulatory institutions*

Key public institutions include Ministry of Agriculture and Rural Development (MARD), ARDA/AZHBR (for subsidy distribution), National Food Authority (for food safety and hygiene inspections) Albania has aligned many regulations with EU directives, but implementation and enforcement are inconsistent, particularly in informal markets. Unlabeled and untested dairy products are commonly sold, suggesting a lack of regulatory oversight. The ANRD consultation process itself represents a positive model of inclusive governance, giving a platform to farmers and value chain actors.

**Conclusions**: Albania's dairy sector faces significant social performance challenges, primarily due to fragmented production, weak farmer bargaining power, labor shortages, and limited institutional support. While cultural traditions and consumer trust in local products provide strong social capital, informal markets dominate, undermining food safety and fair value distribution. Women and youth are underrepresented, and family labor lacks social protection. Animal welfare and access to veterinary care remain weak among smallholders. Nonetheless, cooperatives and targeted NGO programs show potential for improvement. Enhancing formalization, strengthening cooperatives, investing in extension services, and supporting inclusive policies especially for women and youth are essential to foster a fairer, safer, and more resilient dairy value chain in Albania.

### 5.2.3. ENVIRONMENTAL DIMENSION

Albania's dairy industry remains highly fragmented, dominated by very small farms that average fewer than two cows or 30 - 40 small ruminants each. Low yields per animal roughly 3,000 L per cow per year, less than half the EU average mean more livestock are needed to meet demand, amplifying environmental pressures across the sector.

**a. Greenhouse gas emissions and resource intensity**

Enteric fermentation and unmanaged manure are the primary sources of greenhouse gases (methane and nitrous oxide) in Albanian dairying. Because on farm feeding regimes are often imbalanced heavy on low quality roughage and straw milk yields fall well below genetic potential. This inefficiency not only depresses productivity but also magnifies emissions per liter of milk produced. Similarly, energy use is uneven: the smallest holdings rely on hand-milking and negligible machinery, while larger farms invest in electric pumps, cooling tanks and, increasingly, milking parlors yet few have offset this with on-site renewables (e.g. solar panels or biogas digesters).

**b. Manure and waste-water management**

Nearly all small and medium farms lack any purpose-built storage for manure or slurry, instead spreading raw effluent directly on nearby fields or discharging wash-water into ditches. This leads to elevated ammonia emissions, nutrient run-off into waterways, and localized odor and health nuisances. Even mini-dairies rarely treat their process effluent, compounding water-quality risks. Manure management in Albania faces several challenges due to outdated practices, limited infrastructure, and insufficient farmer education. These issues contribute to environmental concerns such as soil and water contamination, greenhouse gas emissions, and hinder the country's alignment with EU agricultural standards.

Albania's livestock sector, comprising cattle, sheep, pigs, and poultry, is predominantly managed by smallholder farms. These farms often lack proper manure storage facilities, leading to direct discharge into the environment. This practice results in soil and water nitrification, particularly on larger farms, posing risks to biodiversity and public health.

Moreover, inadequate manure management contributes significantly to greenhouse gas emissions. The cattle sector alone accounts for 72% of Albania's methane emissions, while poor land and manure practices are responsible for 85% of nitrous oxide emissions.( Charting the Globe – Livestock, Albania). Agriculture is the dominant source of methane emissions in Albania, contributing about 77% of the national CH4

output. This is primarily due to emissions from enteric fermentation in ruminant livestock such as cattle (World Bank (2022) – Climate Change Country Profile: Albania).

Cattle remain the largest contributors to enteric methane. Based on FAO estimates: a dairy cow typically emits 100–130 kg CH4/year, a beef cow emits between 50–90 kg CH4/year (FAO (2013).

**c. Pasture degradation and soil erosion**

Traditional transhumance and communal-grazing systems have largely collapsed since land privatization. As a result, hillside summer pastures are either overgrazed stripping plant cover and accelerating erosion or entirely abandoned, allowing scrub to encroach and further destabilize soils. This dual threat of over- and under-grazing undermines forage diversity and depletes a key natural resource for small ruminant producers.

**d. Energy use**

Energy consumption varies greatly by scale. Small farms continue to operate with minimal energy inputs hand milking and little machinery are common. Larger farms and processing facilities, however, depend on electricity for cooling and processing. Despite this, there is no mention of renewable energy adoption, such as solar panels or biogas systems, within the sector. This represents a significantly missed opportunity to reduce the carbon footprint and improve efficiency.

**e. Biodiversity loss**

In the push for higher yields, farmers have overwhelmingly favored imported high-performance breeds (Holstein, Saanen, etc.), placing native cattle, sheep and goat ecotypes "at risk." The genetic erosion of autochthonous livestock parallels a narrow forage base mostly alfalfa and corn displacing traditional mountain hay-meadow communities that once supported a rich agrobiodiversity.

*Local breed conservation*

Albania's livestock biodiversity including its native cattle, sheep, and goat breeds is both an environmental asset and a part of the country's cultural legacy. However, the pursuit of higher productivity has increasingly led farmers to favor high-yielding imported breeds over indigenous ones. While this shift has improved milk output, it threatens the survival of traditional breeds that have adapted over centuries to local conditions.

Formal conservation efforts remain limited. Although some governmental recognition exists for breeds at risk, comprehensive programs and breed registries are scarce. Still, local breeds continue to persist in various regions, displaying resilience to harsh environments. Without targeted protection, however, their populations may dwindle to unsustainable levels, and with them, a wealth of genetic diversity may be lost.

*Agrobiodiversity in feed*

Feed biodiversity across Albania's dairy farms is also relatively narrow. The majority of farmers cultivate common forage crops such as alfalfa, corn, and small grains. Traditional feed sources especially those associated with mountain hay meadows are seldom used and face the risk of disappearing altogether as these landscapes are increasingly abandoned. If lost, this aspect of Albania's agrobiodiversity may be difficult to recover.

*Wild biodiversity*

The relationship between dairy farming and wild biodiversity is nuanced. Grazing, if properly managed, can help sustain open habitats that are vital for species like grassland birds and pollinators. On the other hand, overgrazing degrades plant cover and soil quality, while under grazing or land abandonment allows scrub to take over, displacing open-land species.

The IPARD program links pasture decline to biodiversity loss, and although no formal monitoring is in place, anecdotal evidence suggests that well-managed transhumance practices can support rangeland

biodiversity. Unfortunately, mismanagement whether from excessive or insufficient grazing continues to undermine ecological balance and species richness.

**f. Packaging and plastic pollution**

As the sector formalizes, milk packaging has shifted to single-use plastics and Tetra Pak cartons. With no industrial-scale recycling infrastructure, packaging waste accumulates in landfills or is burned, creating an emerging environmental burden.

**g. Chemical and antimicrobial risks**

Although pesticide use on pastures is minimal, feed crop areas depend on imported fertilizers and agrochemicals used inconsistently due to farmers' limited resources and technical support. More critically, antibiotic residues from improper withdrawal period observance and scant residue testing threaten antimicrobial resistance in soils and microbes.

Taken together, these interlinked challenges illustrate a sector at an environmental crossroads: traditional, small-scale practices persist without adequate safeguards, while emerging commercial operations often lack the complementary investments manure storage, effluent treatment, renewable energy, pasture management and breed conservation needed to ensure sustainability. Only a coordinated package of regulatory reform, targeted investments and hands-on advisory services can reverse these trends and align Albania's dairy sector with modern environmental standards.

**Conclusions**: Albania's dairy sector faces significant environmental challenges rooted in inefficiency, poor waste management, and biodiversity loss. Low-yield livestock systems and unmanaged manure contribute disproportionately to greenhouse gas emissions, while overgrazed or abandoned pastures accelerate erosion and threaten wild biodiversity. Indigenous breeds and traditional forage diversity are in decline, replaced by imported genetics and monoculture feed. Packaging waste and antibiotic misuse further heighten ecological risks. Despite these issues, the sector lacks investment in renewable energy, manure treatment, and breed conservation. Without coordinated reforms combining regulation, advisory support, and infrastructure, the sector risks deepening its environmental footprint. A systems-based, governance-led, and market-responsive approach is essential to transition toward sustainability.

# 6. POLICY INTERVENTIONS FOR ALBANIA'S DAIRY VALUE CHAIN NATIONAL POLICY

This document presents an integrated set of policy measures designed to address the structural challenges in Albania's dairy value chain. The interventions are framed around three sustainability principles: i) a dynamic, systems-based process; ii) governance-centered development; and iii) an end-market driven approach. Each intervention is designed with a "triple bottom line" in mind delivering economic viability, social inclusiveness, and environmental stewardship while also aligning with the FAO SFS and EU Farm to Fork objectives.

## 6.1. CONSOLIDATED MILK COLLECTION CENTERS

To address the fragmentation and inefficiencies that hinder Albania's smallholder dairy sector, the establishment of Village Cooling Hubs offers a transformative solution. These localized milk collection centers, equipped with cooling tanks and basic testing equipment, serve farmers within a 10–15 km radius. By aggregating and rapidly chilling raw milk, the hubs preserve quality, reduce spoilage, and improve access to formal markets.

This intervention is based on a joint investment model, where dairy processors, cooperatives, municipalities, and public/donor funds (e.g., IPARD, MARD) share costs. Municipalities help with infrastructure and utilities, while farmers benefit from centralized delivery points and fairer pricing tied to milk quality. The economic impact is significant: hubs reduce transport and post-harvest losses, enabling farmers to earn more while processors gain consistent, high-quality supply. Quality-based payment systems further incentivize improvements on-farm. Socially, the hubs improve food safety and nutrition by ensuring clean, safe milk reaches consumers. Chilling at collection points curbs pathogen growth, enhances consumer trust, and supports healthier diets. Environmentally, Village Cooling Hubs reduce emissions by optimizing milk transport and lowering spoilage. They also offer better wastewater handling, protecting ecosystems and increasing climate resilience across the dairy chain. Refer to 9.5. Policy Interventions for Albania's Dairy Value Chain National Policy: detailed analyses for details.

In summary, village cooling hubs represent a scalable, climate-smart investment that delivers economic, social, and environmental returns.

## 6.2. COOPERATIVE DEVELOPMENT SUPPORT PROGRAM

Weak farmer organization remains a core challenge in Albania's dairy sector. Most smallholders lack bargaining power, operate in isolation, and have no voice in price negotiations leaving them vulnerable to market imbalances and processor dominance. To address this, a Cooperative Accelerator Program is proposed to support the formation and strengthening of farmer-led dairy cooperatives.

This intervention combines capacity building with legal, financial, and managerial training and a cooperative incentive package, offering matching grants for shared infrastructure like cooling tanks, feed storage, or pasteurization units. Drawing on successful models like "Myzeqeja Farm," the program will ensure inclusive participation of women and youth while enabling farmers to act collectively.

Economically, cooperatives help farmers secure better prices and contracts, cut costs through shared logistics, and stabilize the value chain. Socially, they improve rural food security, public health, and shared prosperity by producing safer, higher-quality dairy. Environmentally, joint efforts in land management, manure handling, and climate-smart tools reduce emissions and build resilience.

This initiative not only empowers farmers but makes Albania's dairy sector more competitive, inclusive, and sustainable.

## 6.3. MILK QUALITY TESTING AND PAYMENT INCENTIVE SYSTEM

Albania's dairy sector lacks incentives for quality farmers are paid the same regardless of hygiene or milk composition. This discourages best practices, limiting both food safety and competitiveness. To change that, a Milk Quality Testing and Payment Incentive System is proposed.

This intervention will equip milk collection centers with testing units both mobile and stationary to assess fat, protein, bacterial counts, and antibiotic residues. Based on test results, milk will be graded and priced accordingly, rewarding farmers who meet higher standards.

Economically, the system offers fairer compensation, motivating quality improvements while curbing the informal sale of substandard milk. Socially, safer, nutrient-rich dairy boosts public health and food security. Environmentally, better animal care and feed practices reduce spoilage, waste, and antibiotic misuse supporting ecosystem health and lowering the sector's carbon footprint.

This quality-linked pricing model strengthens trust, aligns incentives, and helps modernize Albania's dairy value chain.

## 6.4. INTEGRATED MANURE MANAGEMENT PILOT

Poor manure handling in Albania's dairy sector harms water, air, and soil, while missing the chance to create value. The "Integrated manure management pilot" pilot aims to change that by demonstrating how waste can fuel sustainability.

This intervention supports medium and large farms in two dairy hubs to install modern systems like covered storage, composting units, or small biogas digesters. With support from green financing and IPARD grants, farmers can turn manure into organic fertilizer and clean energy.

Economically, it cuts costs through self-produced inputs and creates new revenue from energy and compost sales. Socially, better hygiene and reduced pollution protect communities and ensure safer food. Environmentally, the initiative curbs runoff and GHG emissions, supports biodiversity, and builds resilience to climate change.

By closing the loop, this pilot lays the foundation for circular agriculture in Albania's dairy sector.

## 6.5. WOMEN AND YOUTH EMPOWERMENT GRANTS

Albania's dairy sector has yet to tap into the full potential of women and youth, who face persistent barriers to entry including limited access to capital, mentorship, and business support. These challenges have left a major portion of rural talent and innovation underutilized. The Inclusive Dairy Entrepreneurship Fund seeks to close this gap by providing targeted financial tools such as matching grants, low-interest loans, and loan guarantees alongside structured business development training.

The fund supports the launch and growth of dairy enterprises led by women and young entrepreneurs, focusing on eligible investments like small processing units, value-added dairy production, and green infrastructure. Implemented through a public-private framework involving MARD, development partners, banks, and local associations, the initiative aims to foster equitable access to resources and opportunity.

Economically, the fund stimulates rural entrepreneurship, promotes innovation, and increases competition in the dairy value chain. By enabling new entrants, it helps diversify dairy offerings and stabilize both

supply and prices. These new businesses create local jobs, generate rural wealth, and make the sector more dynamic and resilient. Socially, the intervention drives inclusion and equity. Targeted support for women and youth leads to more balanced participation in value chain governance and wealth generation. The diversification of dairy products such as fortified milk or artisanal cheeses enhances local nutrition, while better training ensures improved food safety. The broader involvement of marginalized groups fosters stronger community cohesion and rural revitalization. Environmentally, the fund acts as a catalyst for green innovation. By encouraging energy-efficient equipment, water-saving practices, and climate-resilient investments, it lowers the sector's carbon and environmental footprint. It also supports biodiversity through the preservation of local breeds and traditional forages. Youth- and women-led businesses often adopt more diverse, sustainable farming models, contributing to improved land stewardship and long-term resilience in the face of climate change.

Ultimately, the Inclusive Dairy Entrepreneurship Fund is more than a financing tool it's a strategic investment in the future of Albania's dairy industry. By empowering the next generation of dairy leaders, it advances to a more inclusive, innovative, and environmentally sustainable sector.

## 6.6. FINANCIAL ACCESS PROGRAMS FOR DAIRY INVESTMENT

Albania's dairy sector remains constrained by financial barriers, particularly for small and medium producers who struggle to invest in modern equipment and meet rising quality standards. To overcome this, a dual-track intervention is proposed: a Dairy Loan Guarantee Scheme to reduce lending risks and improve access to affordable credit and Streamlined Grants for Small Processors to help producers navigate complex funding programs like IPARD. Together, these programs address both short-term financing gaps and long-term structural upgrades.

The Loan Guarantee Scheme, backed by the government and supported by donors, allows banks to offer loans with lower collateral requirements and interest rates. These loans can fund essential upgrades like automated milking systems or cooling tanks boosting productivity and quality across the value chain. Complementing this, Agricultural Assistance Centers (AACs) will provide technical and administrative guidance to help smallholders and processors prepare successful grant applications. These centers, modeled on the success in Puka, Kukës, and Dibër, will play a key role in simplifying procedures and enabling more equitable access to funds.

Economically, this program promotes inclusive sector growth by enabling small and mid-sized farmers to compete and modernize, lowering production costs and boosting efficiency. Broader credit access spreads investment more evenly and ensures that rural businesses can grow sustainably, helping to stabilize prices and stimulate local economies. Socially, improving access to finance supports food safety and public health by enabling formalization and better processing hygiene. This leads to safer dairy products and more secure nutritional outcomes for consumers. As modernization spreads, employment and income opportunities grow, enhancing rural livelihoods and community well-being. Environmentally, access to finance encourages the adoption of sustainable technologies. Efficient equipment reduces water use and emissions, while proper manure management and biogas investments cut pollution and improve resource recycling. Climate adaptation is strengthened through resilient infrastructure and eco-friendly inputs, collectively reducing the sector's environmental footprint and increasing long-term sustainability.

In summary, this financing framework is not just a tool for investment it's a strategic driver of transformation, helping align Albania's dairy sector with EU standards and green, inclusive growth.

## 6.7. DAIRY REINVESTMENT FUND, CORPORATE SOCIAL RESPONSIBILITY INVESTMENT

In Albania's dairy sector, Corporate Social Responsibility (CSR) offers a powerful tool for companies to invest in the resilience and prosperity of the communities they depend on. The proposed Local Dairy Re-

investment Fund (LDRF) would collect a modest portion of revenues from dairy processors and channel these resources into local infrastructure and services ranging from improved rural roads and milk cooling centers to farmer training and waste management projects. Managed locally with input from farmer groups and oversight from MARD, the fund ensures that reinvestments reflect community priorities while directly strengthening the dairy value chain.

Economically, the fund helps reduce the operational challenges faced by smallholder farmers such as poor roads or lack of cooling infrastructure that drive up costs and reduce milk quality. By upgrading logistics and storage, farmers can deliver milk more reliably, while processors benefit from a more stable, high-quality supply. This improves overall efficiency and competitiveness across the value chain, helping rural economies grow and become more self-reliant. Socially, the reinvestment of industry profits into rural communities fosters inclusion and equity. By funding services like farmer training, youth engagement, and communal facilities, the initiative empowers those often left out of formal markets particularly women and young entrepreneurs. At the same time, improved milk quality and safety lead to better nutrition and public health outcomes, ensuring that communities not only produce but also benefit from safe, high-value dairy products. Environmentally, the fund supports projects that reduce the ecological footprint of dairy production. Investments in eco-friendly cooling systems, communal composting, and improved waste management reduce pollution and resource waste, while road upgrades and renewable energy solutions enhance climate resilience. These measures protect local ecosystems and promote long-term sustainability by making rural communities more adaptive to climate-related risks.

In short, the LDRF transforms CSR into a mechanism for shared progress creating value for businesses, improving livelihoods, and protecting the environment all at once.

## 6.8 IMPROVED EXTENSION SERVICES AND ACCESS TO INFORMATION

To modernize Albania's dairy sector and make it more competitive, a new intervention will upgrade farmer advisory services through Regional Dairy Advisory Hubs, Public-Private Extension Alliances, and a Market Information System. These three pillars work together to bring practical, high-impact support directly to farmers.

The Dairy Advisory Hubs, built on existing Agricultural Technology Transfer Centers (ATTCs), will act as model learning centers where farmers can engage with real-life demonstrations like fodder plots, manure composting, biogas systems, or modern milking practices. These hands-on examples help farmers learn by doing, making it easier to adopt improved techniques that boost productivity and sustainability.

Through Public-Private Extension Alliances, government advisors and private sector experts (from veterinary services, feed companies, or processors) will provide regular training sessions and farm visits. These personalized, community-based engagements ensure that farmers get relevant and timely technical support linked to actual market demands.

Complementing these efforts, a Market Information System delivered via mobile platforms or WhatsApp will give farmers regular updates on milk prices, input costs, and demand trends, helping them make smarter business decisions and negotiate fairer deals.

Economically, this approach reduces production costs by improving herd management, feeding practices, and hygiene, allowing farmers to produce more with less. Access to reliable market data also levels the playing field, helping smallholders command better prices and plan more strategically, increasing their resilience and profitability. Socially, the initiative enhances food safety and nutrition by raising milk quality and production standards. With better training, farmers adopt safer, more hygienic practices, leading to healthier dairy products. Targeted outreach to women and youth also ensures more inclusive development, bringing new energy and equity into the rural economy. Environmentally, practical training on sustainable farming methods like rotational grazing, manure composting, and precision feeding helps reduce emissions, prevent runoff, and improve soil and water quality. Extension services also raise awareness of biodiversity conservation and climate-smart practices, encouraging farmers to adopt resilient techniques that protect local ecosystems and adapt to changing weather patterns.

Altogether, the initiative creates a smarter, greener, and fairer dairy sector anchored in farmer empowerment and knowledge.

## 6.9. ENCOURAGING CONTRACTING BETWEEN FARMERS AND LOCAL PROCESSORS

To reduce market instability and improve coordination in Albania's dairy sector, this intervention promotes formal contracting between farmers and processors. Currently, informal sales dominate the sector, exposing farmers to price volatility and leaving processors with inconsistent supply and quality. By introducing short-term, transparent contracts, this initiative builds trust, secures market access for farmers, and ensures processors get steady, quality-controlled milk.

The intervention will pilot contracting models in key dairy regions, offering clear terms on pricing (fixed or formula-based), quantity, quality, and delivery schedules. These contracts will be supported by technical assistance to help both parties understand, negotiate, and implement fair agreements. Additionally, investment support such as access to IPARD funds will be linked to signed contracts, encouraging on-farm and processing upgrades. To ensure fairness and accountability, third-party facilitation mechanisms, like cooperatives or advisory services, will monitor compliance and mediate disputes.

Economically, contracting improves planning and financial security for farmers, who benefit from stable prices and reduced market risk. It also enables processors to forecast supply and invest confidently in quality improvements. When paired with access to grants and co-financing, these agreements accelerate modernization and make the entire value chain more competitive and efficient. Socially, formal contracts support rural livelihoods by stabilizing farmer incomes and increasing their integration into formal markets. This helps reduce poverty and improves access to services and training, especially for smallholders. In turn, safer milk handling and improved hygiene standards lead to better public health outcomes. Clear, predictable market relationships also make dairy farming more attractive for youth, helping to address rural outmigration. Environmentally, contracts can include clauses that promote sustainable practices, such as responsible manure management or water use. Linked advisory support helps farmers meet these conditions through training in climate-smart methods. Over time, this fosters lower emission, more resource efficient dairy farming, while enabling longer-term investment in resilience and biodiversity conservation across dairy regions.

This intervention creates a win–win–win: stable income and knowledge for farmers, reliable supply for processors, and a cleaner, more resilient dairy system for all.

## 6.10. STRENGTHENED DAIRY STANDARDS AND ENFORCEMENT

Albania's dairy sector faces a critical gap in the consistent application of food safety, animal welfare, and environmental standards. The uneven enforcement of regulations across the value chain undermines consumer confidence, limits competitiveness, and impedes access to higher-value domestic and export markets. This intervention seeks to create a more robust, fair, and effective regulatory environment by combining two strategic approaches: strengthening the capacity of public regulatory authorities and fostering shared enforcement responsibility with private processors.

The first dimension focuses on equipping Albania's food safety and inspection agencies with the personnel, tools, and skills needed to deliver transparent, science-based, and timely oversight. Through targeted investment in training, mobile inspection kits, and digital data management systems, inspectors will be able to carry out rapid tests on milk quality, hygiene, and antibiotic residues, and offer clear feedback to producers. To ensure inclusivity and fairness, a phased compliance approach will be adopted: smallholders will benefit from technical support and a grace period to meet minimum compliance thresholds, while larger processors will be subject to immediate enforcement. This strategy ensures no farmer is left behind while raising the bar across the sector.

In parallel, the intervention emphasizes vertical integration of regulatory accountability by placing part of the responsibility for quality assurance on milk processors. As major buyers of raw milk, processors will be required to verify the safety, quality, and traceability of incoming milk supplies. They will be encouraged to invest in capacity-building among their suppliers—providing guidelines, training, or even lending sanitary equipment or veterinary services. This shared enforcement model not only promotes consistent standards but also builds trust between producers and processors, creating a more transparent and predictable value chain.

Economicaly by enforcing common safety and quality rules across all actors, the intervention ensures that farmers and processors compete on a level playing field. This incentivizes investments in quality and hygiene while deterring informal or unsafe practices. As more producers meet regulatory standards, they become eligible for certification and export opportunities, leading to greater market stability, price transparency, and consumer trust. Additionally, by embedding food safety into production systems, the dairy sector will be better positioned to access public support mechanisms like IPARD or EU integration frameworks, unlocking long-term growth. Socially enhanced dairy regulation contributes directly to food safety, public health, and social equity. When minimum hygiene and traceability standards are enforced, the risk of contaminated milk entering the market declines sharply, protecting consumers especially vulnerable groups like children and the elderly. The formalization of smallholder production through compliance pathways reduces exclusion and promotes integration into formal markets. Stronger regulation also increases the perceived value of Albanian dairy products, encouraging local consumption and cultural pride in domestic production. Environmentally the intervention includes provisions for waste management, water conservation, and controlled antibiotic and pesticide use. These environmental safeguards reduce the ecological footprint of dairy operations particularly the risk of water contamination and soil degradation from untreated effluents. Furthermore, animal welfare standards and regulated grazing practices support biodiversity and prevent overexploitation of pastureland. The use of digital traceability systems enables better monitoring of environmental compliance and helps producers adopt climate-smart technologies like energy-efficient cooling, ultimately making the entire dairy supply chain more resilient to climate risks.

## 6.11. PROMOTING VALUE-ADDED DAIRY PRODUCTS AND DIVERSIFICATION

In Albania's dairy sector, small and medium farmers continue to rely heavily on raw milk sales, which exposes them to fluctuating prices, limited margins, and product waste. To shift this dynamic, this intervention supports farmers and cooperatives in moving up the value chain producing and marketing high-value dairy goods such as cheese, yogurt, kefir, butter, and traditional fermented products that reflect Albania's rich culinary heritage.

The program provides partial grants for small-scale processing equipment, such as pasteurizers, yogurt incubators, and cheese vats, bundled into pre-approved, easy-to-install kits. These micro-processing units allow farmers to transform milk into products with longer shelf life and higher retail value, while reducing dependence on middlemen. To ensure product quality and authenticity, a national "Local Albanian Dairy" seal will be introduced, certifying producers who follow traditional methods, use minimal additives, and meet food safety standards. Farmers will receive hands-on training in good manufacturing practices and be guided through HACCP certification.

To strengthen market access, the program partners with regional agri-tourism networks, enabling producers to sell their goods directly through farm shops, tasting events, and tourist circuits. Marketing campaigns, fairs, and digital platforms will further boost consumer awareness and demand. Complementing the technical side, farmers will receive business mentoring in pricing, branding, logistics, and compliance ensuring that quality improvements are matched by solid business strategies.

The impact is multi-dimensional. Economically, value addition helps farmers capture significantly higher returns often 30–50% more per liter of milk while creating new income streams across rural communities in packaging, tourism, and transport. Socially, the initiative restores pride in traditional dairy-making,

encourages collaboration, and opens space for women and young people to lead new ventures. Consumers, in turn, benefit from safer, more nutritious, locally sourced dairy products. Environmentally, the shift reduces waste by converting milk surpluses into durable goods and supports the use of renewable energy through solar-heated water or small biogas systems. Sustainable packaging and resource-efficient processes help farmers build cleaner, more resilient production systems over time.

Together, these efforts represent a shift from commodity dependence to rural innovation where traditional knowledge, modern practices, and entrepreneurial spirit come together to revitalize Albania's dairy economy.

# 7. CONCLUSIONS AND RECOMMENDATIONS

This strategic roadmap outlines 11 priority policy interventions for the dairy sector, grouped into thematic areas. It emphasizes sustainable agriculture practices and alignment with EU policy objectives for a fair, healthy and environmentally friendly of the food system, in order to ensure economic viability, social inclusion, and environmental stewardship. The plan also recommends a multi-criteria ranking of proposals, clarifies stakeholder roles, and provides a phased implementation timeline for the next 3-5 years.

## SUMMARY OF POLICY PROPOSALS IN THEMATIC AREAS

To develop Albania's dairy sector in line with EU standards, a comprehensive set of policy interventions is proposed across seven priority areas:

1. **Quality infrastructure and food safety**

Modernizing milk collection centers with cooling systems and on-site testing labs will reduce spoilage, ensure food safety, and improve traceability. Upgraded quality standards and certification systems combined with farmer training will enhance compliance with EU regulations, build consumer trust, and enable access to higher-value markets.

2. **Cooperative development and market access**

Strengthening dairy cooperatives will boost farmers' bargaining power, reduce input costs, and improve access to markets and services. Well-governed cooperatives help aggregate milk, facilitate group training, and align with EU policies supporting farmer cooperation and supply chain fairness.

3. **Sustainability and climate resilience**

Promoting climate-smart practices such as biogas digesters, sustainable manure handling, and low-emission feed additives will reduce methane emissions and support Albania's alignment with the EU Green Deal. Environmental conservation measures like rotational grazing, drought-tolerant fodder, and on-farm tree planting will enhance biodiversity, water retention, and resilience to climate shocks.

4. **Finance and investment support**

Dedicated dairy credit lines and grant schemes will enable farmers and processors to invest in modern infrastructure, equipment, and technologies. Risk-mitigation tools such as livestock insurance and milk price stabilization can protect farmers from climate and market shocks, supporting long-term investment and sustainability.

5. **Social inclusion, support for women and youth**

To ensure inclusive growth, targeted support for women and young farmers is essential. Training, credit, and leadership opportunities in cooperatives can empower these groups, enhance rural livelihoods, and drive generational renewal in line with EU rural inclusion objectives.

6. **Product diversification and value addition**

Small grants and training programs will support on-farm processing of high-value dairy products (e.g. cheese, yogurt), boosting rural incomes and reducing waste. Improving infrastructure such as cold chains and farm-to-market roads will help artisanal producers reach broader markets.

7. **Extension services and data systems**

Expanding and digitizing extension services will ensure farmers adopt sustainable practices effectively.

Trained advisors, mobile clinics, and digital tools (apps, traceability systems) will enable real-time feedback, performance tracking, and compliance with EU traceability and food safety standards.

Together, these interventions form a coherent, sustainable roadmap for transforming Albania's dairy sector, grounded in inclusion, productivity, and EU policy alignment.

**Prioritization and ranking of proposals**

Before implementation, it is recommended that decision-makers and key stakeholders undertake a ranking exercise to prioritize the 11 proposals. Each intervention should be evaluated against economic, social, and environmental criteria aligned with sustainable farming principles and EU policy objectives. This multi-criteria analysis ensures a balanced approach, reflecting the CAP's focus on social, environmental, and economic sustainability. For example, criteria can include: projected income gains and cost-effectiveness (economic), benefits to rural communities and gender/youth inclusion (social), and contributions to climate resilience or emissions reduction (environmental). By scoring and weighting proposals on these dimensions, stakeholders can identify "quick wins" and high-impact interventions. The ranking will guide resource allocation to interventions that best advance EU Green Deal targets and national sustainable development goals, ensuring policy coherence with European standards.

**Stakeholder roles and responsibilities**

Successful implementation will require coordinated efforts by a range of actors, with clear lead and supporting roles:

- Government (Ministry of Agriculture and Rural development and Agencies): Lead the overall program, policy reforms, and funding. Government bodies will set quality regulations, provide budget support or subsidies (e.g. for credit or insurance schemes), and coordinate between sectors (agriculture, finance, education).
- Dairy cooperatives and farmer associations: Lead/support at the grassroots level. Cooperatives will implement training and services for farmers, manage milk collection centers, and drive inclusion by engaging smallholders including women and youth members. They serve as key partners to government in reaching farmers and scaling pilot projects.
- Private sector (processors, input suppliers, retailers): Support investment and innovation. Dairy processing companies can invest in cold chain, quality control, and new product development (possibly co-financing diversification projects). Input suppliers (feed, equipment) and agri-tech firms contribute technology and know-how (for instance, providing feed additives or farm management apps). The private sector's market linkages will be vital for sustainable market access.
- Financial institutions: Support finance interventions. Banks, microfinance institutions, and insurance companies will design and roll out the tailored credit and insurance products for dairy farmers, potentially with guarantees or interest support from government. Their role ensures the financial sustainability of interventions like the credit facility.
- Research and extension agencies: Support knowledge transfer. Agricultural research institutes and universities can develop improved dairy practices (breeds, feed, disease control) and monitor results. Extension services (public or NGO) are front-line implementers for farmer training; their capacity building is integral to the extension proposal. Data agencies or IT providers will help build the digital systems.
- Development partners (EU, Donors, NGOs): Support through technical assistance and funding for pilots. Development agencies can provide expertise on EU best practices, grant funding for initial pilots (especially in sustainability or inclusion projects), and facilitate policy dialogue. Given the emphasis on EU alignment, international partners (e.g. EU Delegation, FAO, etc.) will ensure the roadmap's coherence with EU standards and may assist in monitoring and evaluation.

By clearly delineating these roles, the plan fosters accountability. Each intervention will have a designated lead agency (e.g. Ministry of Agriculture and Rural Development for quality standards) and a coalition of supporting actors, so that efforts are complementary and resources optimized.

***Phased implementation plan (Pilot to National Rollout)***

The roadmap will be executed in phases over a 5-year horizon, allowing learning and adjustment before scaling:

Phase 1-Pilot (Year 1): Pilot test selects interventions on a small scale to demonstrate feasibility. In this first year, launch pilots in representative regions for a few high-priority proposals for example, set up 2-3 milk collection & quality centers in different districts, form 1–2 new model cooperatives, and trial the climate-smart practices on pilot farms. Also initiate the design of financial products and the data platform. Meaning credit schemes or loan packages for smallholder farmers and cooperatives, weather-indexed insurance and livestock insurance, equipment and infrastructure leasing arrangements, subsidies or investment grants, and blended finance mechanisms combining public and private funds. Data platforms are digital systems that collect and analyze agricultural information such as milk quality, farm production, prices, and weather to support decision-making, improve traceability, and monitor the performance of interventions across the value chain. During this phase, focus on capacity building: train extension officers, cooperative leaders, and participating farmers. Establish a multi-stakeholder steering committee to oversee progress and document lessons. Milestone (end of Year 1): At least 3 pilot projects operational (e.g. a milk chilling center, a cooperative, a biogas unit), with initial performance data collected for evaluation.

Phase 2- Scaling Up (Years 2-3): Evaluate and expand successful pilots. Conduct a thorough review at the end of Year 1 to identify what's working. In Year 2, refine the interventions based on pilot feedback (e.g. adjust loan terms or training content) and expand coverage. Scale up the most promising interventions to more regions: for instance, increase milk collection centers to cover all major dairy clusters, enroll additional cooperatives in the strengthening program, and roll out the extension service improvements region wide. By Year 3, many interventions move from pilot to regional implementation. This phase also involves securing larger budget allocations or public-private partnerships for expansion. Milestones (Year 2–3): By end of Year 3, at least 50% of dairy farmers are within reach of an improved collection center or cooperative; preliminary data shows improvements (e.g. milk rejection rates down, farmer income up, emission reductions documented in pilot farms).

Phase 3- National Rollout (Years 4-5): Integrate and institutionalize successful initiatives for nationwide impact. By Year 4, the interventions that proved effective and sustainable are rolled out across all target areas of the country. This includes embedding programs into national institutions (for example, permanent financing windows for dairy in banks, or a unit within the Ministry for dairy extension). Continue to broaden the reach of value addition and inclusion programs so they become self-sustaining. Year 5 focuses on consolidation: ensuring legal frameworks are updated (if needed, to formalize quality standards or cooperative policies) and that local capacities are fully established for long-term management. Milestones (Year 4–5): By Year 5, all 11 interventions are under full implementation nationwide or integrated into regular government programs; a final evaluation is conducted, showing measurable gains in milk quality, farm productivity, and rural incomes, alongside progress toward environmental targets (e.g. lower dairy-sector emissions).

Throughout these phases, continuous monitoring and evaluation will guide adjustments. Early successes will be communicated to stakeholders to maintain momentum, and challenges will be addressed through the steering committee. This phased approach balances urgency with prudence, allowing the sector to learn-by-doing and scale interventions that deliver sustainable results.

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# 9. ANNEXES

## 9.1. CORE LEGAL FRAMEWORK RELEVANT TO THE DAIRY SECTOR

| LEGAL INSTRUMENT | TITLE (ENGLISH) | TITLE (ALBANIAN) | NOTES |
|---|---|---|---|
| **Law No. 9817/2007** | On Agriculture and Rural Development | Për Bujqësinë dhe Zhvillimin Rural | Establishes support schemes for dairy investments |
| **Law No. 9863/2008** | Food Law | Ligji për Ushqimin | Regulates milk safety and hygiene |
| **Law No. 10465/2011** | Veterinary Service in the Republic of Albania | Shërbimi Veterinar në Republikën e Shqipërisë | Ensures animal health, milk traceability |
| **Law No. 10288/2009** | Organic Production | Prodhimi Organik | Applicable to certified organic dairy production |
| **Law No. 7501/1991** | Land Distribution | Për Tokën | Important for farm consolidation and investment collateral |
| **Law No. 105/2016** | Land Consolidation | Për Programin Kombëtar të Konsolidimit të Tokës | Enables modernization of fragmented dairy farms |
| **Law No. 72/2012** | Agricultural Cooperatives | Për Kooperativat Bujqësore | Facilitates producer group formation for milk collection |
| **DCM No. 460, 29.06.2022** | Approval of SARD 2021–2027 | Miratimi i Strategjisë për Bujqësinë dhe Zhvillimin Rural | Strategy adoption |

## 9.2. STRATEGIC DOCUMENTS RELATED TO THE DAIRY SECTOR

| DOCUMENT | TITLE | YEAR | NOTES |
|---|---|---|---|
| **SARD 2021–2027** | Strategy for Agriculture and Rural Development | 2022 | Core policy document with dairy sector emphasis |
| **IPARD III** | Instrument for Pre-Accession Assistance for Rural Development | 2021–2027 | Supports dairy processing, farm investments, milk quality |
| **EU CAP 2023–2027** | Common Agricultural Policy | 2021–2023 | Strategic alignment for dairy modernization and compliance |

| DOCUMENT | TITLE | YEAR | NOTES |
|---|---|---|---|
| **Green Agenda for WB** | Green Agenda for the Western Balkans | 2020 | Promotes sustainable livestock and dairy systems |
| **NSDI III** | National Strategy for Development and Integration | 2022 | National planning umbrella |

## 9.3. SUSTAINABILITY SCORING TABLES

Table 3: Integrated economic sustainability indicator (Likert scale 1–5)

| SCORE | DESCRIPTION |
|---|---|
| **1 - Very Low** | The food system operates at a financial loss, with widespread business closures. Job opportunities are shrinking, wages are low, and labor conditions are poor. Minimal tax revenues contribute little to public services. Food supply is highly unstable, with frequent shortages and heavy import dependence. |
| **2 - Low** | Profitability is weak, with businesses struggling to survive. Job creation is limited, with many temporary or unstable positions. Tax revenues are low due to a large informal sector. Food supply is unreliable, with moderate dependency on imports and risks of supply chain disruptions. |
| **3 - Moderate** | Businesses maintain stable but low profitability, allowing for some reinvestment. Employment is steady but wages remain modest. Tax contributions are moderate, with partial formalization of food-related businesses. The food supply is relatively stable but still requires external support or imports. |
| **4 - High** | The food sector is profitable, with sustained business growth. Job creation is strong, offering stable employment and career advancement. Tax revenues from the food system are significant, supporting public services. The food supply is reliable, with a mix of domestic production and imports ensuring security. |
| **5 - Very High** | Strong profitability enables high reinvestment and expansion. The sector provides abundant, well-paid jobs with social protection. Tax contributions are substantial, bolstering economic development. Food security is robust, with self-sufficient production and a resilient supply chain. |

Table 4: Integrated social sustainability indicator (Likert scale 1–5)

| SCORE | DESCRIPTION |
|---|---|
| 1 - Very Low | Extreme inequality in value distribution; marginalized groups (women, youth, indigenous people) have no access to economic opportunities. Cultural traditions related to food are rapidly disappearing. Poor nutrition and widespread health issues, including food insecurity and malnutrition. Unsafe labor conditions, exploitation, and lack of worker protection. No regard for animal welfare; cruel and unsustainable practices dominate. Weak or corrupt institutions fail to enforce food system regulations and social protections. |

| SCORE | DESCRIPTION |
|---|---|
| 2 - Low | Limited inclusion of marginalized groups in economic activities, with some wage and opportunity disparities. Cultural food traditions are under pressure, with industrialization displacing traditional diets. Some progress in nutrition and health, but food access remains unequal. Labor rights are weakly enforced, with informal and precarious employment. Animal welfare standards are minimal, with widespread unethical practices. Institutions exist but have limited capacity or enforcement power. |
| 3 - Moderate | Partial equity in value distribution, with growing but unequal access to opportunities for vulnerable groups. Some preservation of cultural traditions, though dietary shifts toward processed foods are occurring. Moderate nutrition and health improvements, but diet-related diseases persist. Workers' rights are somewhat protected, though informal labor remains an issue. Basic animal welfare laws exist but are inconsistently applied. Institutions function but have enforcement challenges. |
| 4 - High | Fair distribution of value, with active policies supporting gender, youth, and indigenous participation in the food system. Cultural traditions are respected and integrated into modern food systems. Good nutrition and health outcomes, with broad access to safe and nutritious food. Strong labor protections, fair wages, and safe workplaces. Animal welfare is prioritized with ethical treatment standards in place. Institutions effectively regulate food safety, labor rights, and sustainability practices. |
| 5 - Very High | Full inclusion of all social groups in value distribution, with no systemic barriers to participation. Cultural traditions are actively preserved and celebrated within the food system. Excellent nutrition and health indicators, with universal access to high-quality food. Workers' rights and safety are fully protected, with strong enforcement of labor laws. High animal welfare standards ensure humane treatment and sustainable practices. Institutions are transparent, effective, and uphold high governance standards in all food system activities. |

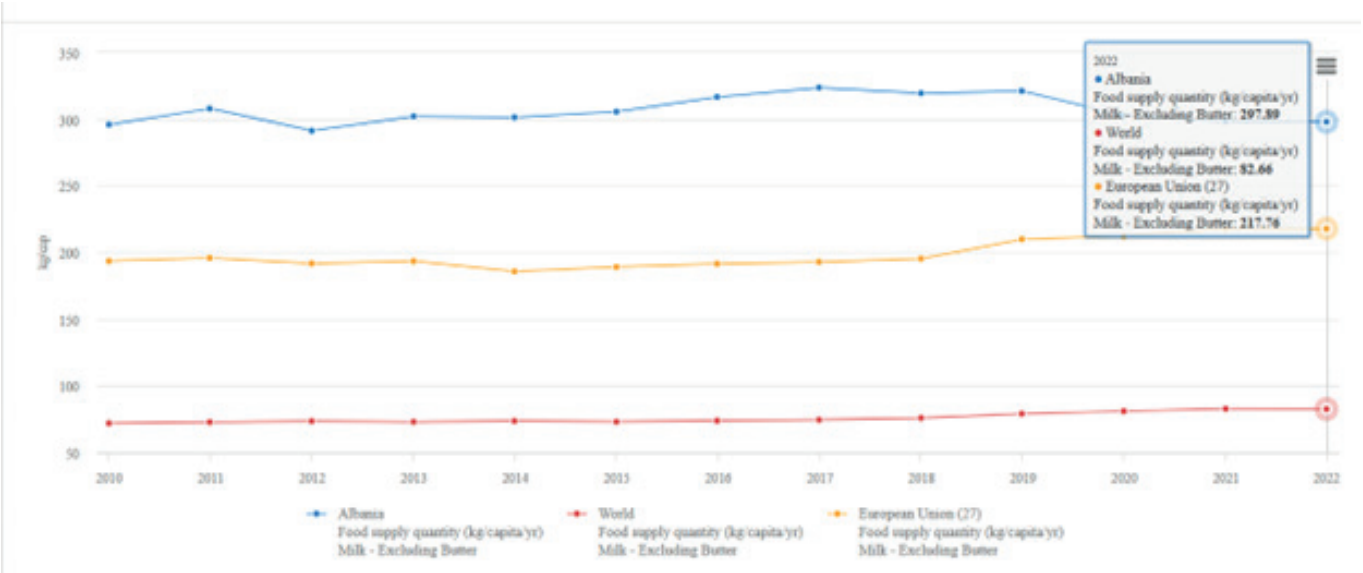
Table 5: Integrated environmental sustainability indicator (Likert Scale 1–5)

| SCORE | DESCRIPTION |
|---|---|
| 1 - Very Low | Extremely high carbon and water footprints, with heavy reliance on fossil fuels and inefficient water use. Severe degradation of soil and water resources, with high pollution and desertification risks. Widespread harm to animal and plant health due to excessive pesticide and antibiotic use. Uncontrolled food loss and waste, with no measures for reduction or recycling. Rapid biodiversity loss due to deforestation, habitat destruction, and monoculture farming. High toxicity levels in food, water, and soil due to industrial pollution and chemical residues. |
| 2 - Low | High environmental impact with some efforts to mitigate damage. Carbon and water footprints remain large, with inefficient resource use. Soil and water quality are poor, with signs of degradation and contamination. Moderate to high risks to animal and plant health from pollutants and chemicals. Some policies for food loss reduction exist but are weakly implemented. Biodiversity is under threat, with declining species populations and ecosystem damage. Toxicity levels are concerning, with chemical use exceeding safe limits. |

| SCORE | DESCRIPTION |
|---|---|
| 3 - Moderate | Some progress in reducing environmental impact. Moderate carbon and water footprints with partial adoption of sustainable practices. Soil and water health show signs of recovery, though some contamination persists. Animal and plant health protections exist but enforcement is inconsistent. Food loss and waste management is improving, with growing awareness and partial implementation of reduction strategies. Biodiversity loss is slowing, with conservation efforts in place but limited in scope. Toxicity levels are monitored, but occasional contamination issues remain. |
| 4 - High | Low carbon and water footprints due to widespread use of renewable energy and efficient water management. Soil and water resources are well-managed, with strong conservation and pollution control measures. Animal and plant health is a priority, with responsible use of inputs and disease prevention strategies. Effective food loss and waste reduction measures are in place, with high recycling and reuse rates. Biodiversity is protected, with sustainable agricultural practices and habitat conservation efforts. Minimal toxicity, with strict regulations on chemical use and food safety enforcement. |
| 5 - Very High | Extremely low environmental impact, with a carbon-neutral and water-efficient food system. Soil and water health are fully restored and sustainably managed, with no contamination. Animal and plant health is safeguarded through natural and sustainable practices, eliminating harmful inputs. Near-zero food loss and waste, with circular economy principles fully implemented. Biodiversity is thriving, with strong ecosystem protection and regenerative agriculture. No toxicity, with a fully clean and safe food system ensuring environmental and human health. |

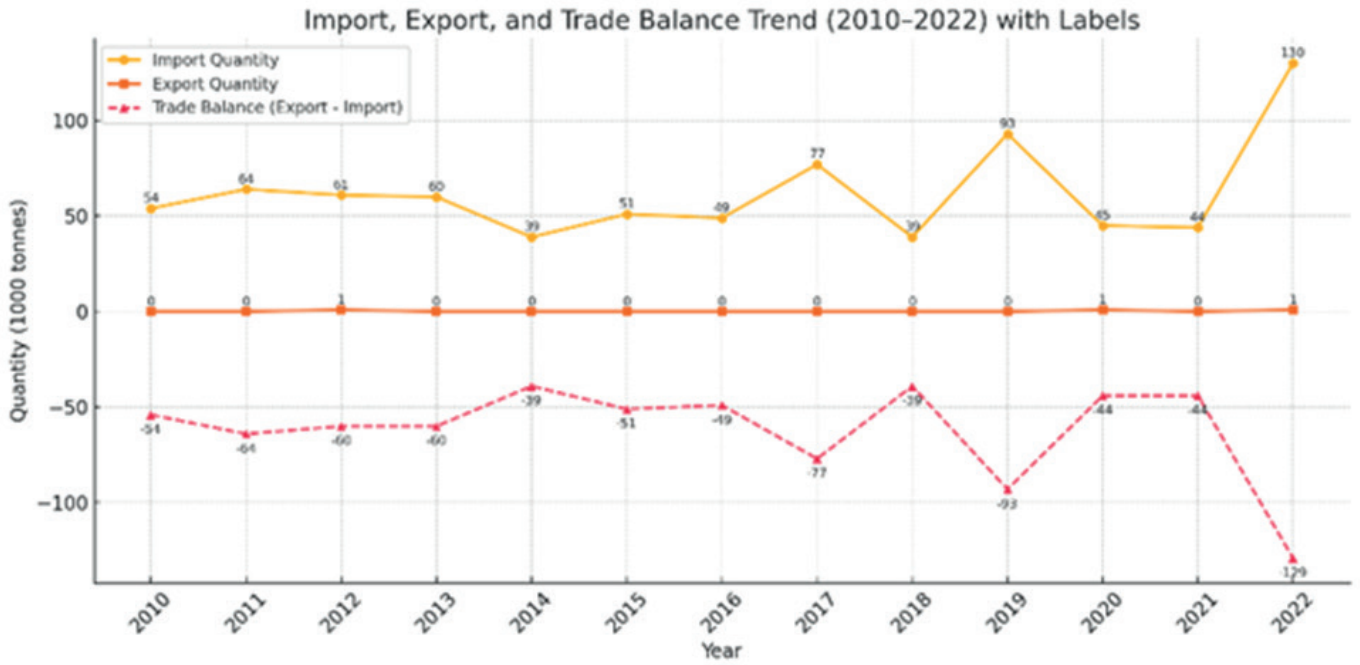
## 9.4. CONSUMPTION AND TRADE

**Figure 1: Milk per capita consumption: Albania compared to EU and World**




*Source: Source: Authors based on FAO, (2025).*

Figure 2: Milk trade performance: Import, export and trade balance (000 tons)




*Source: Authors based on FAO, (2025).*

## 9.5. POLICY INTERVENTIONS FOR ALBANIA'S DAIRY VALUE CHAIN NATIONAL POLICY: DETAILED ANALYSES

**1. Consolidated Milk Collection Centers (Village Cooling Hubs)**

Smallholder dairy farmers in Albania face significant barriers in accessing formal markets due to fragmented production, inconsistent milk quality, and high logistical costs. These challenges often result in high post-harvest losses, lower farm incomes, and limited incentives for quality improvement. Establishing Village Cooling Hubs addresses these systemic issues by providing a centralized infrastructure for milk aggregation, cooling, and preliminary quality control within a manageable collection radius (10–15 km). Immediate cooling of milk at the collection point is critical to preserving its quality and safety, reducing spoilage risks, and meeting the higher standards required by processors and export markets. By formalizing milk collection through shared hubs, smallholders can more easily integrate into value chains, benefit from more stable and predictable income, and receive better prices linked to quality parameters.

Establish local milk collection hubs equipped with cooling tanks and basic milk testing facilities to aggregate raw milk from smallholders within a 10–15 km radius. These "Village Cooling Hubs" serve as shared, formalized points for milk collection, which reduces the cost and spoilage risks associated with individual farm deliveries.

**Key implementation points:**

- **Joint Investment Scheme**: Dairy processors, farmer cooperatives, and public funding programs (e.g., MARD, IPARD, donor agencies) share the costs.
- **Local Infrastructure**: Municipalities facilitate site selection and provision of utilities.
- **Quality Preservation**: Immediate cooling preserves quality, enabling processors to secure a stable, higher-quality supply.
- **Economies of Scale**: Collecting milk centrally reduces logistics costs and improves price stability by linking small farmers to formal markets.

**Triple bottom line justification:**

*Economic*: The intervention fosters fairness and efficiency by significantly enhancing farmer returns and improving overall cost structures. Centralized collection hubs empower smallholders with increased bargaining power, enabling them to earn quality-based premiums for their milk. This collective approach reduces individual transportation and spoilage costs, translating into lower overall operational expenses. The resulting economies of scale lead to more stable and competitive pricing in the dairy market, ensuring that cost savings are passed on to consumers while enabling producers to share in the increased value generated throughout the supply chain.

*Social*: On the social front, the intervention reinforces food security, enhances nutrition, and protects public health by ensuring that high-quality dairy products safely reach consumers. Rapid chilling at collection points inhibits pathogen growth, bolstering food safety and reducing the risk of foodborne illnesses. The reduction in spoilage and improved collection logistics ensure that more milk becomes available, thus improving market supply and nutritional outcomes for local communities. By fostering a formal, reliable dairy supply system, the intervention builds consumer confidence in dairy products, supporting healthier eating practices and ensuring that safe, nutritious dairy items remain accessible and affordable for all.

*Environmental*: The intervention delivers a strong environmental impact by reducing transport emissions and GHG emissions, while minimizing spoilage to conserve resources and lower the carbon footprint per liter of milk. Furthermore, by managing wastewater in a controlled manner at these hubs, local water bodies and ecosystems are better protected. Optimized logistics and proper cooling also create adaptive infrastructure that maintains safety even during extreme heat, thereby enhancing the overall climate resilience of the dairy value chain.

**2. Cooperative development support program**

The lack of cooperatives and farmer associations weakens farmers' bargaining power. During consultation meetings, a lack of cooperation and trust among farmers was evident: "We don't have unions, we have nothing." (Focus group discussion, male farmer, Lushnje, October 2024). Even where they exist, farmers' unions and associations are often inactive or ineffective: "Associations do not convey farmers' concerns." (Focus group discussion, male farmer, Zall Herr, November 2024). Limited cooperation prevents farmers from influencing decision-making and price setting. They are almost always subject to the prices set by processors, with little control over the final value of milk. This is due to the dominance of a few large processors, the absence of long-term contracts, and the lack of horizontal cooperation among farmers. As emphasized in focus groups in Lushnje: "The two factories have the power to set the price." (Focus group discussion, male farmer, Lushnje, October 2024). Only large farms have relatively stronger negotiating power, as they supply high-quality products that meet standards and provide milk in larger quantities. (ANRD, 2024)

To help farmer-based dairy cooperatives grow and thrive, we propose launching a coordinated accelerator program designed to support them from the ground up. This initiative has two main pillars. First, through a Capacity Building component, we'll equip groups of farmers with the tools they need to succeed, offering hands-on legal, financial, and managerial training, along with ongoing mentorship as they come together to form cooperatives. Second, the Cooperative Incentive Package will ease the financial burden of starting up. By providing matching grants or seed funding, we'll help cooperatives invest in essential shared infrastructure, like milk collection centers with cooling tanks, jointly owned pasteurizers, or bulk feed purchases. Together, these efforts aim to turn cooperative ambition into sustainable, farmer-led enterprises.

**Key implementation points:**

- **Mentorship and Training**: Draw on successful cooperative models like "Myzeqeja Farm" as benchmarks.
- **Inclusive Participation**: Ensure that women and youth are not only welcomed but provided with dedicated support.
- **Shared Investments**: Encourage infrastructure improvements that smallholders could not otherwise afford individually.

**Triple bottom line justification:**

*Economic*: Enhanced bargaining power from collective action enables individual farmers to negotiate fairer contracts and secure better prices, which is essential for creating a more competitive market. The model of inclusive wealth distribution, where profits are shared among cooperative members, results in more stable and competitive dairy prices for consumers. These economic benefits are amplified by the cost savings achieved through reduced spoilage and more efficient logistics, ensuring that the value chain is both competitive and profitable, while also delivering fair returns to smallholders and stimulating further investment in the dairy sector.

*Social*: Through a focus on stable production, cooperatives enable consistent dairy output that strengthens local food security by ensuring that reliable volumes of milk are available to the market. Higher quality products—achieved by joint investments in technology and training—lead to safer and nutritionally richer dairy items that improve both public health and dietary outcomes. This consistency and improved quality contribute directly to enhanced food security and better public health by reducing risks associated with unsafe dairy production. As communities benefit from these improvements, the overall well-being of rural populations is reinforced, ensuring that dairy products are not only available but also contribute positively to nutrition and health standards. By tackling rural poverty and inequality through shared profits and resources, cooperatives further strengthen communal resilience and unity.

*Environmental*: Shared Environmental Investments by cooperatives, such as communal manure management and sustainable grazing practices, help reduce pollution and soil erosion. In addition, efficient transport through fewer individual trips lowers fuel consumption and GHG emissions, further decreasing the dairy sector's environmental footprint. Cooperative-led initiatives also promote holistic land management through practices like rotational grazing that maintain diverse pasturelands, while the preservation of indigenous breeds ensures genetic diversity is sustained. Furthermore, climate-smart investments, for example, installing renewable energy solutions like biogas systems and using drought-resistant fodder crops, help lower greenhouse gas emissions, and resilience through cooperation means that shared resources and incomes can reduce vulnerability to climate shocks, collectively bolstering the environmental sustainability of the value chain.

### 3. Milk quality testing and payment incentive system

In the current dairy landscape, there is little to no reward for producing high-quality milk. Farmers are typically paid a flat rate per liter, regardless of the milk's nutritional value or safety. This system not only overlooks the efforts of producers who invest in better practices but also fails to encourage broader improvements in hygiene, animal health, or feeding techniques. As a result, milk quality remains inconsistent, and the sector struggles to meet higher food safety and export standards. Introducing a quality-based pricing system is essential to shift this dynamic. By linking payments to clearly defined quality grades, farmers will

have a direct financial reason to improve their production methods. This approach creates a win–win: it empowers producers to increase their income through better milk, and it supports processors and consumers with more reliable, safer, and higher-value dairy products.

In the absence of such incentives today, this intervention fills a critical gap in the value chain. It introduces a transparent, fair, and actionable framework that aligns economic motivation with quality improvement, laying the foundation for a more competitive, sustainable, and trustworthy dairy sector.

To raise milk quality standards nationwide, a new incentive system will be introduced that ties the market price of raw milk directly to its quality. This initiative has two main elements. First, mobile and stationary testing units will be installed at milk collection centers to assess key quality indicators, including fat and protein levels, bacterial count, somatic cell count, and the presence of antibiotic residues. Second, a transparent grading system will be established, ensuring that farmers producing higher-quality milk, classified, for example, as "Grade A", receive a higher price, while milk of lower quality is purchased at a reduced rate. By aligning financial rewards with quality, this system will motivate farmers to adopt better production practices and strengthen the entire dairy value chain.

**Key implementation points:**

- **Government and Donor Support**: Subsidize testing equipment and training for staff at remote locations.
- **Collaborative Design**: Engage major dairy processors and farmer groups in developing grading standards to ensure fairness and practicality.
- **Feedback Loop**: Provide immediate, actionable feedback to farmers alongside quality test results.

**Triple bottom line justification:**

*Economic*: About economic fairness, the system's fairer pricing mechanism rewards higher-quality milk, ensuring that farmers are compensated for their best efforts and benefit from more stable incomes. Simultaneously, market efficiency, driven by transparent quality standards, helps curb the gray market for low-quality milk and fosters greater trust across the dairy value chain, ultimately contributing to a more robust and equitable market environment.

*Social*: In terms of food security, nutrition, and public health, the emphasis on safer dairy products, underpinned by rigorous quality control, minimizes the risk of foodborne illnesses and antibiotic resistance. Moreover, enhanced nutritional value is achieved by preserving crucial proteins, vitamins, and minerals through healthier herds and improved on-farm practices, thus boosting overall health outcomes within local communities.

*Environmental*: In terms of environmental impact, the approach encourages sustainable practices by linking improved milk quality to better animal husbandry, including optimal feed management and waste reduction. Because higher-quality milk typically has lower bacterial loads, there is a corresponding reduction in waste through decreased spoilage and resource wastage. Building biodiversity & ecosystem health, responsible input use, supported by rigorous testing, discourages the overuse of antibiotics and other chemicals that could harm soil and water microbial communities. This system incentivizes on-farm improvements by providing direct financial rewards to farmers who adopt eco-friendly practices. Additionally, the focus on climate change mitigation leverages efficiency gains, as healthier cows produce more milk using fewer resources, thereby improving the carbon intensity of production. Reliable income premiums also encourage farmers to invest in climate-smart technologies like energy-efficient cooling, further supporting adaptation incentives that strengthen the overall resilience of the dairy sector.

### 4. Integrated manure management pilot

Currently, poor manure management practices in the dairy sector contribute significantly to environmental degradation, including water pollution, greenhouse gas emissions, and unpleasant odors that impact surrounding communities. Despite the growing pressure for greener agricultural practices, most dairy farms lack the infrastructure, knowledge, or financial support needed to manage manure sustainably. Untapped, this waste represents both an environmental liability and a lost economic opportunity.

Piloting an integrated manure management program offers a practical and scalable solution. By helping medium and large dairy farms install systems like covered manure storage, composting units, or small biogas digesters, this initiative will turn waste into valuable resources, such as organic fertilizer and clean energy, while cutting down environmental risks. Linking farmers to cost-sharing mechanisms, such as IPARD grants or green financing, will ease the initial investment barrier, making adoption more feasible.

In a context where structured manure management is largely absent, this intervention serves as a crucial demonstration of circular agriculture. It not only reduces the environmental footprint of the dairy industry but also opens new revenue streams for farmers, making the sector more resilient, sustainable, and future-ready. Successful pilots will pave the way for scaling up nationwide, helping transform waste management from a burden into a driver of growth.

Pilot an integrated manure management program in two key dairy districts to demonstrate circular agriculture. The initiative supports medium and large dairy farms in installing covered manure storage systems, composting units, or small-scale biogas digesters. The treated manure is then converted into organic fertilizer or biogas energy, reducing environmental pollution and generating additional revenue streams.

**Key implementation points:**

- **Local partnerships**: Engage municipalities and environmental NGOs to ensure technical guidance and local applicability.
- **Infrastructure development**: Invest in building and upgrading manure storage and treatment facilities to prevent environmental contamination. Use IPARD grants or green financing to subsidize part of the investment. (Cost-Sharing Mechanism)
- **Farmer training programs**: Implement educational initiatives to train farmers on sustainable manure management practices and the benefits of adopting modern technologies.
- **Climate-resilient practices**: Promote manure management techniques that are adaptable to changing climate conditions, ensuring long-term sustainability.
- **Policy implementation and enforcement**: Strengthen the regulatory framework to enforce proper manure management practices and align with EU environmental standards.

**Triple bottom line justification:**

*Economic*: Regarding economic returns, cost savings are realized by producing one's own fertilizer and energy, significantly reducing input costs. Meanwhile, new revenue streams can be secured by selling excess biogas or organic fertilizer, boosting farmer incomes and supporting rural economic development.

*Social*: When considering food security, nutrition, and public health, improved farm productivity is attained through better manure management that supports higher quality fodder production, ensuring sustained dairy output. Moreover, enhanced public health results from reduced environmental contamination, lowering the risk of waterborne and foodborne illnesses in nearby communities.

*Environmental*: In addressing environmental impact, pollution reduction is achieved through covered manure storage that minimizes nutrient runoff and water contamination, while renewable energy is harnessed when biogas digesters capture methane from manure, replacing fossil fuels and lowering GHG emissions. Additionally, resource recycling is promoted by converting manure into compost that keeps nutrients within the agricultural cycle, reducing the need for synthetic fertilizers. Biodiversity enhancement further supports ecosystem protection by reducing nutrient runoff and safeguarding aquatic habitats from eutrophication, while soil health improvement is achieved by enriching soil organic matter with compost, fostering biodiversity among soil micro-organisms and beneficial insects. For climate change mitigation & adaptation, emissions reduction is realized by capturing methane to prevent potent GHG emissions, and resilient agriculture is bolstered by reliable renewable energy sources and nutrient recycling, improving farm sustainability amid climate variability.

### 5. Women and youth empowerment grants for dairy enterprises

In the existing dairy sector, women and young entrepreneurs face major obstacles when trying to launch or grow their businesses. Without access to affordable financing, mentorship, or tailored business support, their potential remains largely underutilized. At present, there are no specific programs designed to help bridge this gap, leaving a critical segment of the rural economy underserved.

Establishing an "Inclusive Dairy Entrepreneurship Fund" directly addresses this imbalance. By offering matching grants, low-interest loans, and loan guarantees, the fund will help women and youth overcome the traditional financial barriers that often prevent them from accessing capital. Coupled with hands-on business development training, this initiative will not only help individuals start and expand their dairy enterprises but also equip them with the skills and confidence needed to succeed long-term.

In a sector that urgently needs new ideas, energy, and more inclusive growth, empowering women and youth is a strategic investment. Supporting their entrepreneurship will not just promote equity, it will drive innovation, stimulate local economies, and strengthen the future resilience of the dairy industry.

Establish a targeted "Inclusive Dairy Entrepreneurship Fund" aimed at supporting dairy businesses led by women and young entrepreneurs. The program provides financial assistance, via matching grants, low-interest loans, or loan guarantees, and business development training to lower traditional barriers in accessing capital.

**Key implementation points:**

- **Investments**: Modern dairy infrastructure, development of value-added dairy products, or the establishment of small processing units.
- **Preferential terms**: Favorable grant percentages, lower collateral requirements, and tailored mentorship programs.
- **Stakeholder collaboration**: Implemented by MARD in partnership with donor agencies, development banks, local commercial banks, and women's/youth farmer associations.

**Triple bottom line justification:**

*Economic*: By introducing new entrants, the model stimulates market competition and innovation, which can help lower overall product prices and stabilize supply. Access to capital for young entrepreneurs encourages business growth in rural communities, generating profitable opportunities for emerging dairy enterprises and supporting a more dynamic, resilient value chain.

*Social*: Inclusivity and equity are promoted by directing investment toward young and female entrepreneurs, effectively leveling the playing field and fostering equitable wealth distribution in rural communities. This approach boosts diversity in the sector, ensuring that a broader range of stakeholders contribute to, and benefit from, the dairy value chain. Increased product diversity, including fortified milk and specialty cheeses, broadens local nutrition options, while improved food safety measures, supported by formalized training, reduce public health risks and enhance overall community well-being.

*Environmental*: Encouraging the use of modern, efficient technologies (e.g., solar-powered cooling, water-saving equipment) and promoting green innovation among young entrepreneurs drive energy savings, reduce pollution, and strengthen the sector's sustainability. Biodiversity conservation also benefits when empowered women and youth explore diverse farming practices, such as maintaining heritage breeds and diversified forages, and adopt enhanced land stewardship. This extends to climate change adaptation & mitigation, where the adoption of climate-smart technologies, including energy-efficient cooling and drought-resistant livestock, lowers emissions and builds resilience. By providing financial support for these initiatives, the model ensures that farmers can invest in risk management strategies, collectively reinforcing the environmental sustainability of dairy production.

### 8. Financial access programs for dairy investment

The Albanian dairy sector faces several challenges in terms of modernization, infrastructure, and market access, with small and medium dairy farmers often struggling to secure the necessary financing to upgrade their operations. These challenges include high costs associated with infrastructure improvements, such as cooling tanks and automated milking systems, as well as the complexities involved in applying for grants and other financial support programs. Therefore, enhancing access to finance is essential for fostering the growth and sustainability of the dairy sector. Small and medium-sized dairy processors often face significant barriers in accessing grants due to the complex application procedures and stringent eligibility criteria.

To enhance access to finance for dairy producers, the combination of two complementary measures would significantly contribute to the modernization and sustainability of the sector. These measures are:

- **Dairy Loan Guarantee Scheme which** focuses on reducing the risks associated with lending to dairy farmers by providing a government-backed partial credit guarantee. This scheme helps banks and microfinance institutions offer loans to dairy producers at lower interest rates and with reduced collateral requirements. The loans could be used to upgrade essential dairy infrastructure, such as installing cooling tanks or automated milking systems. By making loans more accessible and affordable, this scheme can help dairy producers modernize their operations, improve efficiency, and enhance product quality.
- **Streamlined Grants for Small Processors**, this measure seeks to simplify the application process for agricultural grants, particularly those available through programs like IPARD. By establishing dedicated Agricultural Assistance Centers (AACs), farmers and processors will receive targeted support in preparing applications, formalizing operations, and meeting the necessary criteria for modernization and value-adding projects. The Centers for Agricultural and Rural Assistance (CAARs), already effective in regions like Puka, Kukës, and Dibër, can serve as a model for nationwide expansion. These centers offer both administrative and technical assistance, which not only facilitates the application process but also increases the likelihood of success in obtaining financing.

Together, these initiatives provide a comprehensive approach to improving access to finance for dairy producers. The Dairy Loan Guarantee Scheme helps with the upfront costs of modernization, while the streamlined grants program supports the long-term growth and formalization of small and medium processors. The CAARs play a crucial role in both simplifying the process and offering necessary technical guidance, thus paving the way for greater farm development and integration into EU markets and standards.

**Key implementation points:**

- **Inter-agency coordination**: MARD, ARDA, and the Ministry of Finance coordinate alongside commercial banks.
- **Technical support**: Extension services and advisory teams aid producers in navigating the grant process.
- **Donor involvement**: International donors may contribute funds or technical expertise to support the guarantee fund or improve application assistance.

**Triple bottom line justification:**

*Economic*: By fostering broadened access to credit for small and mid-size producers, the intervention ensures that the benefits of modernization are distributed across the dairy value chain rather than being concentrated among larger players. This approach drives economic equity, enabling producers of varied scales to upgrade their operations and remain competitive. Fair pricing, driven by increased productivity and lower unit costs, helps keep consumer prices stable while benefiting both producers and buyers, further encouraging sustainable business growth in rural markets.

*Social*: Strengthening food security and safeguarding public health are achieved by expanding production capacity through upgraded, more efficient operations that yield safe dairy products. As more of the dairy chain adheres to formal safety protocols, risks of contamination decrease, supporting healthier communities. By making reliable, nutritious dairy options widely available, this model enhances overall social well-being and contributes positively to local populations' dietary needs.

*Environmental*: Encouraging the adoption of modern, efficient equipment, which reduces water usage, chemical runoff, and pollution, significantly mitigates environmental impact. Enhanced waste management systems, including proper manure storage and biogas solutions, further cut harmful emissions. Additionally, investments that promote biodiversity support, such as sustainable intensification to prevent encroachment on sensitive lands and resource-efficient production methods, help preserve soil and water ecosystems. In terms of climate change mitigation, upgraded machinery lowers GHG emissions, while improved adaptation tools (e.g., drought-resistant fodder, renewable energy) bolster farm resilience against climate extremes and ensure a more robust, sustainable dairy sector.

### 9. Dairy reinvestment fund, CSR investment

Corporate Social Responsibility (CSR) refers to the voluntary commitment by businesses to contribute to sustainable economic development while improving the quality of life for employees, their families, the local community, and society at large. CSR goes beyond profit generation and legal compliance, focusing on actions that have a positive impact on the environment, social equity, and ethical practices. It encompasses a range of activities, including environmental sustainability efforts, ethical labor practices, community development initiatives, and responsible governance. Through CSR, companies aim to align their operations with societal values and demonstrate a commitment to addressing social challenges, ultimately creating long-term value not just for the business, but for the broader community as well.

In the context of CSR, companies have a unique opportunity to not only achieve financial success but also contribute to the long-term sustainability and well-being of the communities in which they operate. For dairy companies, investing in local infrastructure that supports the dairy supply chain can enhance their operations, improve the efficiency and quality of production, and build stronger relationships with local stakeholders.

By investing in the community's infrastructure, a dairy company demonstrates its commitment to shared prosperity and sustainable development. The local supply chain, including smallholder farmers, transporters, and dairy processors, benefits from improved infrastructure and services, which in turn boosts the company's own production capacity and profitability. This creates a positive feedback loop, where investment in community infrastructure directly enhances both the social and economic vitality of the surrounding area.

Furthermore, these investments help mitigate some of the risks associated with the dairy industry, such as inefficiencies in logistics or environmental impacts, while enhancing the company's reputation and demonstrating leadership in corporate responsibility. This approach aligns with global trends in CSR, where companies are increasingly expected to contribute to local community development, sustainability, and the broader goals of inclusive economic growth.

As part of a forward-thinking CSR strategy, a dairy company can pilot a Local Dairy Revenue Reinvestment Fund (LDRRF) in select dairy-producing municipalities. This initiative involves collecting a modest levy from the revenues of formal dairy processors, with these funds being reinvested into local infrastructure and community projects that directly benefit the dairy supply chain. By investing in such initiatives, the dairy company can create lasting positive impacts on the local community, enhance the efficiency of the supply chain, and improve the overall quality of dairy production.

The reinvestment fund would be used to support projects that directly benefit the dairy sector, such as:

- **Improving rural roads and utilities**: Investments in rural road networks and utilities (water, electricity) can significantly improve the efficiency of milk collection and delivery. Well-maintained roads ensure timely transportation of milk, reducing wastage and enhancing the quality of dairy products. Additionally, better utilities help ensure that farmers have access to the resources they need to maintain their operations.
- **Upgrading or constructing shared milk collection and cooling facilities**: Developing or upgrading shared facilities where milk can be collected, stored, and cooled would directly support smallholder dairy farmers. Access to modern cooling systems ensures milk is preserved for longer periods, maintaining its quality and reducing spoilage. Shared facilities also reduce the financial burden on individual farmers who may not have the means to invest in expensive infrastructure.
- **Supporting local training programs and technical support centers**: A critical component of a successful dairy supply chain is the skill and knowledge of the local workforce. The company can invest in training programs for farmers on best practices in dairy farming, animal health, and sustainable production techniques. Technical support centers can also be set up to provide ongoing assistance to farmers, ensuring they have access to the expertise needed to improve productivity and quality.
- **Communal waste management projects**: Investing in waste management initiatives at the local level, such as community composting or recycling systems, helps reduce the environmental impact of dairy farming. Proper waste management contributes to sustainable farming practices, enhances the local environment, and promotes responsible corporate stewardship.

This CSR initiative not only enhances the company's reputation and strengthens its connection to local communities but also creates an ecosystem in which both the company and the surrounding community can thrive. By supporting infrastructure development and fostering a more efficient and sustainable dairy supply chain, the company can ensure its own long-term success while contributing to the development of a more prosperous and sustainable dairy industry.

This approach reinforces the notion that CSR is not just about charity; it's a strategic investment in the company's future and in the health and well-being of the communities it serves.

**Key implementation points:**

- **Local management**: Municipal councils manage the fund with oversight from MARD.
- **Stakeholder input**: Farmer groups and cooperatives have a say in how funds are allocated to best address local priorities.
- **Corporate social responsibility**: Processors contribute to the fund as part of their CSR, reinforcing long-term partnerships with producers.

**Triple bottom line justification:**

*Economic*: Better infrastructure reduces operational costs for farmers by minimizing disruptions, shortening transportation times, and improving logistics efficiency. These savings can be passed along to consumers in the form of more competitive prices while still preserving fair returns for producers. Such streamlined operations promote a robust, sustainable dairy market that supports ongoing investments and fosters long-term rural economic stability.

*Social*: By directing a portion of the industry's profits into the communities where milk is produced, profit sharing fosters balanced wealth distribution and strengthens local livelihoods. Enhanced infrastructure also boosts food security, nutrition, and public health—milk can be transported quickly and safely to processing facilities, reducing spoilage and contamination risks. Meanwhile, reinvesting in local public services and health initiatives creates stronger rural communities with better access to nutritious, safe dairy products, thereby elevating overall social well-being.

*Environmental*: Investments in sustainable infrastructure, such as solar-powered lighting and eco-friendly cooling centers, curb emissions and mitigate environmental disruption, while restoration projects (e.g., reforestation, watershed protection) help revitalize ecosystems. These efforts bolster biodiversity by maintaining natural habitats and promoting community-led conservation efforts. Moreover, upgrading roads, water storage, and energy supply enhances climate resilience, enabling communities to better withstand hazards like floods and droughts. Complementary local energy initiatives (e.g., renewables) further reduce reliance on fossil fuels, ensuring a more ecologically balanced and enduring dairy value chain.

### 10. Strengthened dairy extension services and access to information

The Albanian dairy sector is undergoing a critical transition, facing both growing opportunities and significant challenges in terms of competitiveness, quality standards, and sustainability. However, one of the major bottlenecks to sectoral growth remains the limited access of farmers to high-quality advisory services, practical training, and reliable market information. Most dairy farmers operate with outdated knowledge, limited technical support, and little connection to modern production and business practices, which constrains their productivity, profitability, and ability to meet rising consumer and export standards.

Expanding and upgrading farmer advisory services through a more structured and dynamic system addresses this gap directly. Establishing Regional Dairy Advisory Hubs builds on existing infrastructure, ensuring cost-effectiveness while creating centers of excellence where farmers can learn by seeing and doing. Practical demonstrations, whether in improved animal nutrition, milk hygiene, sustainable manure management, or fodder production, are far more effective in changing practices than theoretical training alone. Farmers need real-world, visible examples to build trust in new methods and feel confident adopting them on their own farms.

In parallel, the creation of Public-Private Extension Alliances leverages the strengths of both public and private actors. Public extension officers bring outreach capacity and trust, while private sector experts offer cutting-edge technical knowledge tied directly to market demands. This collaboration ensures that training is not only technically sound but also closely aligned with what processors, retailers, and consumers expect in terms of quality and safety. Continuous farm visits and local workshops make advisory services more accessible, more customized, and more action-oriented.

Finally, by integrating a Market Information System, farmers are given a powerful tool to strengthen their position in the dairy value chain. Information asymmetry has long disadvantaged producers, who often have little bargaining power or insight into broader market dynamics. Regular access to up-to-date price trends, input costs, and market opportunities—through mobile apps, portals, or simple messaging services like WhatsApp—would allow farmers to make better-informed decisions, improve their profitability, and reduce vulnerability to exploitation.

Altogether, this intervention strengthens the foundation of the dairy sector by empowering farmers with knowledge, practical skills, and market intelligence. By modernizing advisory services and improving transparency, the initiative helps build a more competitive, sustainable, and resilient dairy value chain, supporting Albania's broader goals for rural development, food security, and EU integration.

To strengthen the knowledge, skills, and competitiveness of dairy farmers, a two-pronged strategy is proposed to expand and upgrade farmer advisory services across Albania. The first step focuses on transforming select existing Agricultural Technology Transfer Centers (ATTCs) into specialized Regional Dairy Advisory Hubs. These hubs would become dynamic centers of learning and innovation, where farmers could engage with real-life demonstrations of best practices. Model dairy farms, small-scale biogas units, and fodder production plots would provide practical, hands-on examples of modern animal husbandry, hygienic milk production, efficient feeding strategies, and sustainable waste management. By seeing these practices in action, farmers could more easily adopt them at their own farms, building confidence and accelerating improvements in production and sustainability.

Alongside these hubs, the intervention envisions the creation of Public-Private Extension Alliances. These alliances would bring together government extension officers and private sector experts, such as feed specialists, veterinarians, and quality managers from dairy processors, to deliver continuous, on-the-ground support. Through regular farm visits and village workshops, farmers would receive tailored advice and technical assistance directly in their communities, fostering stronger relationships between producers, advisors, and the private sector, and ensuring that knowledge transfer is practical, timely, and highly relevant to farmers' needs.

To further empower farmers, the initiative would also introduce a Market Information System, designed to increase transparency around dairy markets and pricing. By using accessible platforms such as mobile portals or WhatsApp groups, farmers would receive regular updates on market trends, input costs, and milk prices.

Together, these measures aim to build a modern advisory ecosystem that not only improves farmers' technical knowledge but also empowers them economically, contributing to a more competitive and sustainable Albanian dairy sector.

**Key implementation points:**

- **Hands-On Demonstrations**: Practical field school: Use model farms to show techniques like balanced ration formulation, proper milking procedures, and integrated disease management. Organizing practical field schools can be an effective way to transfer knowledge on food ration management, food planning, and basic accounting. These hands-on sessions, conducted by centers like ATTC, will help farmers realize immediate benefits and adopt best practices in their operations.
- **Collaborative training**: Training and practical advice are crucial for improving farmers' skills and knowledge. Joint sessions delivered by public and private experts help align on-farm practices with market quality requirements.

- **Market information**: Access to real-time information would strengthen farmers' positions in the value chain, allowing them to make more informed decisions about when and where to sell their milk, negotiate fairer prices, and plan their production more strategically.
- **Inclusive outreach**: Special efforts to involve women and youth ensure that all segments of the farming community benefit.

**Triple bottom line justification:**

*Economic*: Efficiency and fairness, lower costs are achieved through enhanced management practices that reduce production expenses, allowing farmers to compete more effectively in the market. Furthermore, empowered producers gain access to knowledge, information and modern techniques, increasing their bargaining power and ensuring they can secure fair prices for their milk.

*Social*: Focusing on food security, nutrition, and public health, increased production results from higher yields and better milk quality, boosting the overall supply of nutritious dairy products. Improved safety also follows from on-farm trainings that lead to better hygienic practices, thereby reducing risks of contamination and foodborne illness.

*Environmental*: In terms of environmental impact, sustainable practices, such as training in manure composting, precision feeding, and water conservation, lower emissions and reduce runoff. Compliance promotion through extension services raises farmer awareness of environmental regulations, driving higher rates of sustainable compliance. Emphasizing biodiversity conservation, ecosystem stewardship is encouraged by demonstrations on rotational grazing and mixed pastures, while pesticide reduction safeguards beneficial insect populations. Local breed conservation is also supported by extension programs that highlight the value of indigenous livestock, preserving genetic diversity. Regarding climate change mitigation & adaptation, efficient resource use, via improved herd management and energy-efficient technologies, decreases the carbon intensity of production, and adaptive techniques help farmers cope with climate variability through drought-resistant fodder and better water management.

**11. Encouraging contracting between farmers and local processors:**

In Albania's dairy sector, market volatility, informal transactions, and weak coordination between producers and processors undermine efficiency and long-term growth. Most farmers sell milk without prior agreements, exposing them to price shocks and inconsistent demand, while processors struggle with unreliable milk supply and fluctuating quality. This unpredictability discourages investment, weakens trust across the value chain, and makes it harder to meet modern standards, particularly those required for integration into EU markets.

Introducing formal short-term contracts between farmers and local dairy processors provides a practical and low-risk mechanism for building stability and trust. These agreements offer mutual benefits: farmers gain market security and price predictability, while processors secure a steady milk supply aligned with quality expectations. Contracts can be designed with either fixed pricing or transparent cost-reflective formulas, ensuring fairness and adaptability.

To promote structured and reliable relationships in the dairy value chain, this intervention aims to introduce and expand contractual agreements between milk producers and local processors through the following measures:

- **Pilot short-term contracting models**: Launch pilot projects in selected dairy regions to demonstrate practical examples of short-term contracts between farmers and processors. These

models will include clearly defined terms for milk quantity, quality, pricing (fixed or formula-based), and delivery schedules. The pilots will serve as learning platforms, encouraging replication and adaptation.

- **Technical assistance and advisory services**: Provide hands-on support to farmers and processors to facilitate contract negotiations, clarify legal and financial terms, and ensure contracts are fair and enforceable. Training will also cover quality standards, pricing mechanisms, and recordkeeping to ensure both parties benefit from the arrangement.
- **Link to investment support (e.g., IPARD)**: Use signed contracts as a basis for accessing public support schemes such as IPARD. Farmers and processors engaged in contractual partnerships will be eligible for co-financing of on-farm infrastructure, milk collection equipment, or processing upgrades, helping to modernize production and increase value addition.
- **Monitoring and trust-building mechanisms**: Establish simple tools and third-party facilitation mechanisms (e.g., extension services, cooperatives) to oversee contract compliance and resolve disputes. This helps build confidence and transparency while reducing risks for both parties.

### Key implementation points

1. **Phased Introduction of Contracting**. Start with voluntary pilot contracts in selected regions, offering technical and legal support to farmers, while gradually encouraging broader adoption through incentives.
2. **Strengthen Contract Traceability and Transparency**. Ensure contracts are registered or documented through local authorities or producer organizations to increase transparency and accountability.
3. **Stakeholder Collaboration and Support**. Work with dairy associations, cooperatives, NGOs, and advisory centers to raise awareness, facilitate contract negotiation, and assist smallholders in understanding and entering fair agreements.

### Triple bottom line justification

*Economic*: Encouraging formal contracts between dairy farmers and local processors strengthens economic efficiency and fairness by providing farmers with predictable income streams and reducing their exposure to market volatility. Processors benefit from a reliable milk supply, allowing for better planning and cost control. Contracts incentivize farmers to invest in quality improvements and productivity, supported by linked access to IPARD or similar investment funds. This creates a more stable and efficient value chain where both parties can achieve better financial outcomes and competitiveness in domestic and regional markets.

*Social*: From a social perspective, contracts enhance rural livelihoods by improving income stability for small-scale farmers, thus contributing to poverty reduction and social cohesion. They promote greater inclusion of smallholders into formal value chains, increasing their access to services, training, and market opportunities. In addition, formalized relationships encourage better adherence to milk hygiene and quality standards, leading to safer dairy products and improved public health outcomes. Stable markets also incentivize young farmers to remain in or return to rural areas, helping to address rural depopulation.

*Environmental*: By formalizing supply relationships, contracts can embed environmental standards and good agricultural practices into the terms of production, encouraging more sustainable farming methods. For example, processors can require compliance with waste

management, water conservation, and sustainable feeding practices as part of contract agreements. Technical support linked to contracting helps farmers adopt climate-smart practices—such as improved manure handling and precision feeding—reducing the environmental footprint of dairy production. In the long run, stable farm incomes and planned investments support better resource management, biodiversity conservation, and resilience to climate change across dairy-producing regions

### 12. Strengthened dairy standards and enforcement

The Albanian dairy sector is currently facing challenges with regulatory enforcement, particularly when it comes to food safety, quality control, and animal welfare. Inconsistent adherence to these standards across the supply chain not only puts consumer health at risk but also limits the sector's growth potential, especially as it aims to meet the rigorous demands of international markets like the EU. Without an effective and comprehensive regulatory system, the dairy industry struggles to compete and grow sustainably.

By building the capacity of regulatory bodies and involving dairy processors more directly in the enforcement process, we can create a more integrated and efficient system that benefits both small and large producers. This will help ensure that Albania's dairy sector meets modern standards of food safety, quality, and animal welfare, both improving consumer confidence and expanding market access.

To tackle the challenges of regulatory enforcement in the dairy sector, this intervention proposes a two-pronged approach that combines capacity building for regulators and vertical coordination of enforcement through the active involvement of dairy processors.

Capacity Building for Regulators. The first component of the strategy focuses on strengthening the regulatory bodies responsible for ensuring that dairy production meets essential food safety and quality standards. By increasing the number of inspectors and providing them with better training and more advanced tools, such as rapid test kits and digital data management systems, the regulatory system can operate more efficiently and effectively. In particular, inspectors will be equipped to carry out quick, accurate tests, monitor compliance, and enforce regulations more reliably. Additionally, a graduated compliance system will be introduced, which allows small producers to receive support and guidance over a period of time as they work to meet compliance standards. This flexible approach ensures that small farmers are not excluded while larger producers can meet stricter requirements immediately.

Vertical Coordination of Enforcement. The second component aims to integrate dairy processors into the enforcement process by requiring them to play an active role in ensuring the safety and quality of the milk they receive. Processors will be responsible for verifying that their suppliers adhere to basic food safety standards, such as avoiding the use of unauthorized antibiotics and ensuring proper milk cooling during transport. This not only ensures a higher standard of product but also encourages processors to support their suppliers by offering practical assistance. For example, processors may provide suppliers with training, guidelines, or even loan sanitary equipment and veterinary services to help them meet the required standards. This collaborative approach encourages a more transparent and accountable supply chain, while also fostering trust between farmers, processors, and regulators.

By combining these two strategies, improving regulatory capacity and involving processors in the enforcement process, this intervention ensures that Albania's dairy sector operates with the highest standards of food safety, quality, and animal welfare. This, in turn, will lead to better consumer health outcomes, greater competitiveness in both domestic and international markets, and a more sustainable dairy industry overall.

**Key implementation points:**

- **Phased Enforcement**: Small producers receive a grace period and support to reach compliance, while larger operators face immediate standards.

- **Improved Traceability**: Mandate traceability from farm to factory to ensure accountability and facilitate monitoring.
- **Stakeholder Collaboration**: Work with dairy associations and NGOs to help communicate regulations and assist smallholders in meeting compliance requirements.

**Triple bottom line justification:**

*Economic*: By promoting economic fairness through a level playing field, the regulations ensure that all market participants compete under the same rules, rewarding those who invest in quality and safety. This transparent approach helps stabilize the market and encourages ongoing improvements in production standards. In turn, stable pricing emerges from formalized markets and reliable contracts, benefiting both producers, who can count on predictable revenue, and consumers, who gain access to competitively priced dairy products.

*Social*: Strengthening food security, nutrition, and public health is achieved by mandating safer products through enhanced quality checks and traceability protocols that significantly reduce contamination risks. This reliable assurance of product safety bolsters consumer confidence in domestically produced dairy, which not only drives higher market demand but also contributes to a more secure and nutritious food supply for communities.

*Environmental*: To minimize environmental impact, the regulations require waste management measures such as effluent treatment standards that substantially reduce pollution, along with energy efficiency upgrades that lower overall emissions. In terms of biodiversity conservation, strict controls on pesticide and antibiotic use curb soil and water pollution, while improved land management practices, including regulated grazing and animal welfare, help prevent overgrazing and habitat loss. Further climate change mitigation & adaptation efforts include modernization benefits, like introducing energy-efficient cooling and pasteurization systems to reduce the sector's carbon footprint, and system resilience strategies that leverage a formalized, traceable supply chain to implement risk-sharing mechanisms and climate-related support measures.

### 13. Promoting value-added dairy products and diversification

The Albanian dairy sector remains heavily dependent on raw-milk sales, leaving farmers exposed to fluctuating farm-gate prices and low margins. Smallholders, in particular, lack the infrastructure, skills, and market channels to convert milk into higher-value products, cheese, yogurt, whey-based beverages, specialty butters, kefir, and traditional fermented goods, that could capture price premiums, extend shelf-life, and open new domestic and export niches. Without targeted support, this dependency on commodities will perpetuate rural under-employment, constrain incomes, and limit Albania's ability to showcase its unique dairy heritage on growing agri-food markets.

This intervention establishes an integrated support package, combining capital grants, technical assistance, branding, and market development, to enable small and medium dairy farms (and cooperatives) to build their own micro-processing capacity and effectively market differentiated dairy specialties. It comprises four pillars:

- **On-farm micro-processing grants:**
  - Seed-funded, cost-share grants (e.g., 50 % grant, 50 % farmer contribution) for basic processing equipment (small-scale pasteurizers, cheese vats, butter churns, yogurt incubators, whey stretch tanks).
  - Modular "start-up kits" standardized for 1-5 ton/day capacity, enabling rapid deployment.

- **Quality schemes and branding:**
  - Development of an official "Local Albanian Dairy" seal, managed by a public-private board, guaranteeing origin, traditional recipes, and minimal-additive production.
  - Training in Good Manufacturing Practices (GMP) and HACCP so producers can qualify for the seal.
- **Market linkages and agri-tourism integration:**
  - Collaboration with regional agri-tourism associations to incorporate farm-gate tasting rooms, on-site cheese-making demonstrations, and direct-sale outlets.
  - Co-funded promotional campaigns (digital, print, fairs) showcasing the seal's producers and products.
- **Technical and business development support:**
  - Extension teams (RAAE + private consultants) provide hands-on training in small-scale cheese-making, yogurt cultures, packaging design, labeling compliance, and basic food safety testing.
  - Mentorship on cost accounting, pricing strategy, distribution logistics, and e-commerce platforms.

### Key implementation points

- **Eligibility and outreach**: Target farms with at least 1 t/day milk throughput or cooperative groups of 3-5 smallholders pooling 5-10 t/day. Conduct regional calls for proposals via CAARs.
- **Equipment standardization**: Pre-approve vendor lists and "plug-and-play" equipment packages to streamline procurement and installation.
- **Certification pathway**: Fast-track training and audit support so grantees can be approved under the "Local Albanian Dairy" seal within 6 months of grant disbursement.
- **Market development fund**: Allocate 15 % of project budget to collective marketing efforts, festival booths, digital marketplaces, partnership with tourism boards.
- **Monitoring and mentorship**: Assign each grantee a business coach for monthly check-ins on production volumes, quality metrics (e.g., moisture, fat content), and sales data.

### Triple bottom line justification

*Economic*: By equipping farmers and small cooperatives with the tools, know-how, and branding support to transform raw milk into artisanal cheeses, yogurts, kefir, and other specialty products, this intervention unlocks far greater value than plain milk sales ever could. Instead of the low, commodity-driven farm-gate price, producers will capture quality premiums of 30–50 % by selling branded, "Local Albanian Dairy" goods directly to consumers, retailers, and niche export buyers. The on-farm processing grants and standardized equipment kits minimize start-up risk and accelerate breakeven, while the Market Development Fund fosters new sales channels, farm-gate shops, regional agri-tourism outlets, digital marketplaces, creating reliable outlets that stabilize cash flow year-round. In turn, the local economy benefits from increased farm incomes cascading into service providers, equipment vendors, logistics operators, and tourism businesses, generating a virtuous cycle of rural investment and job creation.

*Social*: This initiative does more than boost earnings, it breathes new life into Albania's rich dairy heritage. As small-scale cheesemakers master time-honored recipes and modern, hygienic practices side by side, they preserve cultural traditions while offering consumers authentic tastes of regionally distinctive Feta-cheeses, strained yogurts, and whey-based beverages. The creation of communal processing hubs and agri-tourism partnerships fosters greater social cohesion: families, cooperatives, and local councils work together to host farm tours, tasting events, and seasonal festivals. Young entrepreneurs and women, often under-represented in rural agribusiness, find pathways to leadership in product development and direct marketing, strengthening community resilience. Moreover, safer, higher-quality local dairy products enhance public health and nutrition, supporting food security by ensuring that families have access to fresh, traceable dairy options.

*Environmental*: Value-adding at the farm gate transforms what were once seasonal surpluses, milk volumes that far exceed immediate sales, into long-lasting products, dramatically cutting waste. Rather than discarding excess milk or over-feeding calves, farmers channel nearly 100 % of their harvest into cheese vats and yogurt cultures, reducing methane emissions associated with spoilage. The equipment packages include options for renewable-energy integration, solar-heated pasteurization water, small biogas digesters fueled by whey solids, so that processing footprints shrink even as production climbs. By embedding lifecycles thinking into every step (from sourcing feed to choosing energy-efficient incubators), producers become stewards of land and water resources, demonstrating that high-value dairy can flourish hand-in-hand with environmental protection.