



# Livelihoods at the Margins: Smallholder Vulnerability, Structural Constraints, and Rural Development Pathways in Georgia's Pastoral Sheep Sector

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## Abstract

In many post-Soviet transition economies, smallholder pastoral systems persist as a primary livelihood base for rural households while simultaneously remaining structurally marginalised from formal markets and policy frameworks. Georgia's sheep sector exemplifies this tension: concentrated in ecologically distinctive regions such as the Kakheti Steppes and the highland-lowland transhumance corridor of Tusheti, it sustains smallholder families whose economic position is shaped less by resource scarcity than by fragmented organisational structures, land tenure insecurity, degraded communal pastures, and unequal chain governance. Drawing on a primary socio-economic survey of 71 shepherd households (SABUKO, 2024a), national production and trade statistics, and a systematic value chain analysis, this paper examines the structural conditions that suppress income stability and market participation among smallholder producers. It situates these findings within the Sustainable Livelihoods Framework and the broader literature on agricultural transition in post-Soviet economies. The analysis identifies pasture degradation, limited knowledge of sustainable grazing practices, aggregation failures, and institutional certification gaps as compounding constraints that concentrate value upstream of smallholder producers. The paper proposes a strategic framework for addressing these constraints, with implications for rural development policy, conservation-linked livelihoods, and the governance of pastoral commons in comparable transition-economy contexts.

**Keywords:** smallholder livelihoods; pastoral systems; rural vulnerability; post-Soviet transition; sustainable livelihoods framework; Georgia; value chain governance; land tenure; pasture degradation; geographic indication.

## 1. Introduction

Georgia's relationship with sheep farming spans centuries. From the Colchian lowlands of western Georgia to the alpine plateaus of Tusheti and the semi-arid steppes of the Iori River Plateau, pastoralism has shaped landscapes, livelihoods, and cultural identities across the South Caucasus. Sheep herding is not merely an economic activity: it is a civilizational practice embedded in language, cuisine, architecture, and seasonal ritual. The Tushetian transhumance system, in which herding families move flocks from the highland summer pastures of Tusheti to the winter grazing lands of Kakheti, is among the most distinctive pastoral traditions surviving in Europe and Central Asia, with roots traceable to at least the seventeenth century (Shepherd's Life, 2021; Mad Agriculture, 2021).

Despite this deep pastoral heritage, it has not translated into stable or equitable economic returns for the smallholder households who sustain it. In recent years, the national sheep flock has remained relatively stable following a decline from mid-2010s levels, but production growth has been limited and the sector's structural composition has changed little. Sheep and goat meat contribute only a modest share of national meat production, while milk from small ruminants has shown limited growth. For the majority of shepherd families, pastoralism remains an informal, low-margin livelihood strategy characterised by fragmented landholdings, dependence on intermediary traders, insecure access to communal grazing land, and limited capacity to invest in productive assets. Exports continue to be dominated by live animals, primarily to Gulf Cooperation Council (GCC) countries and neighbouring markets, rather than higher-value processed or branded products. While this trade provides important income, it captures only a fraction of the chain's potential value, leaving smallholder producers at the least-remunerative node of the chain.

The structural gap between Georgia's pastoral resource endowment and its realized market performance is the central concern of this paper. Rather than treating this gap purely as a problem of export strategy, the analysis foregrounds it as a rural development challenge: the conditions that prevent smallholder households from accessing stable income, investing in their land, and participating in formal value chains are simultaneously the conditions that perpetuate rural vulnerability and drive pasture degradation. This paper applies a systematic Value Chain Analysis (VCA) framework, situated within the Sustainable Livelihoods Framework and the broader literature on agricultural transition in post-Soviet economies, to examine the structural position of smallholder producers in the Georgian sheep sector. Drawing on Geostat national statistics, UN Comtrade trade data, and the primary field evidence collected by SABUKO across the Iori Plateau, the paper maps the value chain, diagnoses the constraints that most directly affect smallholder livelihoods.

## **2. Theoretical Framework: Value Chain Analysis and the Sustainable Livelihoods Perspective**

Value chain analysis has become a foundational methodology in development economics and agribusiness research since Porter's (1985) conceptualization of the 'value chain' as the sequence of activities through which a product accumulates value as it moves from raw materials to end consumers. For agricultural applications in developing and transition economies, this framework was extended by Gereffi, Humphrey, and Sturgeon (2005) through their concept of governance structures, the power relations and coordination mechanisms that determine how value is distributed among actors at different stages of the chain. Gereffi et al. (2005) identify five governance types, market, modular, relational, captive, and hierarchical, each carrying distinct implications for the capacity of primary producers to move into higher-value activities, a process they term 'upgrading.' In contexts where primary producers are smallholder households dependent on agriculture for basic income security, governance type is not merely an efficiency question: it is a livelihood question. Captive and market-type governance structures, which are characteristic of informal livestock trading in post-Soviet pastoral economies, consistently restrict smallholders' ability to capture a greater share of chain value, reinforcing patterns of rural income inequality even where production volumes are adequate.

In applied agricultural settings, particularly in low- and middle-income countries, the ValueLinks methodology developed by the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) has become the standard operational framework (Springer-Heinze, 2007). ValueLinks organizes the chain around functional nodes, input supply, primary production, aggregation, processing, and marketing, while assessing performance dimensions: efficiency, equity, competitiveness, and sustainability. This paper adopts the ValueLinks approach as its primary analytical structure, but grounds the analysis in a Sustainable Livelihoods Framework (SLF) perspective. The SLF, developed by the UK Department for International Development (Chambers & Conway, 1992; Scoones, 1998), focuses analytical attention on the asset portfolios available to rural households (natural, human, social, physical, and financial capital), the vulnerability context in which they operate (shocks, seasonality, trends), and the institutional and policy environment that mediates livelihood outcomes. Applied to the Georgian pastoral sector, this dual framework permits examination of the value chain not only as a production and market system but as a set of institutional arrangements with direct consequences for household income, resource access, and long-term resilience.

The literature on agricultural VCA in transition economies consistently identifies that post-farmgate constraints — specifically processing infrastructure, food safety certification, and market access — are more often the binding limitations on export competitiveness than primary production capacity per se (Dries et al., 2004; Gorton & Davidova, 2004). This finding has important implications when read alongside a Sustainable Livelihoods lens: it suggests that smallholder producers in post-Soviet

pastoral systems are disadvantaged not primarily by insufficient effort or inadequate resources, but by institutional and infrastructural arrangements that systematically exclude them from higher-value markets. Regulatory compliance, rather than insufficient livestock numbers or inadequate pastoral knowledge, constitutes the most immediate structural barrier to premium market integration — a barrier whose costs fall disproportionately on smallholder producers with the least capacity to absorb them.

Geographic Indication (GI) systems represent a well-documented instrument for capturing heritage value premiums in agri-food products linked to place-specific traditions. Belletti, Marescotti, and Touzard (2017) demonstrated that GI-registered products consistently command export price premiums averaging 15–40% over generic equivalents, while simultaneously anchoring rural development ecosystems around the producing regions. These findings are directly pertinent to Georgian sheep products, particularly Tushetian Guda cheese and the traditional Nabe felted wool, which possess strong and internationally distinctive provenance claims but currently lack comprehensive GI protection. Rangnekar (2004) further documents GI's dual role in protecting both producers' market rights and intangible knowledge systems, a dimension especially relevant to a heritage pastoral tradition facing demographic decline.

The Revealed Comparative Advantage (RCA) index is a widely used measure of a country's export competitiveness for specific products. An RCA value above 1 indicates that a country exports a product at a higher share than the global average, suggesting a comparative advantage. Values below 1 suggest that the country's potential comparative advantage is not fully reflected in trade flows. In the case of Georgian sheep products, low RCA values would be consistent with evidence of underperformance in these sectors, despite favorable resources and long-standing production traditions.

### **3. The Georgian Sheep Sector: Background and Structure**

Georgia's sheep herd has experienced a gradual decline in recent years, reflecting broader structural and demographic pressures. Factors such as rural out-migration, vulnerability of smallholder farms to climate variability and input costs, and the persistence of informal production practices have contributed to this trend. Following the post-Soviet recovery period, when the national flock stabilized after dramatic declines, the sector now faces a phase of gradual contraction. Regional concentrations remain pronounced, with certain areas serving as primary hubs for sheep farming due to their ecological suitability and access to domestic markets. These regions support traditional transhumant systems and underpin both local consumption and trade flows, often through informal channels.

Production across major sheep product categories, including meat, milk, and wool, reflects a sector responsive to market conditions rather than large-scale structural growth. Meat output is sensitive to trade patterns and domestic demand, while milk

production has remained relatively steady. Wool production has gradually declined, reflecting reduced processing capacity and global market pressures. Overall, while sheep farming continues to play an important cultural and economic role, much of its potential remains underexploited, particularly in higher-value processing and export-oriented activities.

The spatial organization of Georgian sheep farming cannot be understood apart from the transhumance system, the seasonal migration of flocks between complementary ecological zones. Each year, shepherd families drive their animals from the highland summer pastures of Tusheti, Mtskheta-Mtianeti, and adjacent mountain ranges down to the lowland winter grazing areas of Kakheti steppes, returning in April or May as snow retreats.

SABUKO's 2024 socio-economic survey of 71 shepherd families across these areas provides the most granular contemporary analysis of the pastoral community's economic condition and structural vulnerabilities (SABUKO, 2024a). The findings are striking in their consistency. Across the sample, vast majority of farmers reported not having heard of rotational grazing, a practice widely regarded as the minimum threshold for sustainable pasture management and some portion also indicated that even after receiving an explanation, they had no interest in adopting it. This knowledge gap is compounded by a tenure insecurity that severely limits investment horizons: only some farmers owned both their farmstead and their pasture land, while mostly were lessees, operating on land they do not own and on which they cannot make long-term infrastructure investments (SABUKO, 2024a).

The ecological assessment supporting these socio-economic observations paints a concerning picture. A pilot study within the Chachuna Managed Reserve, conducted as part of SABUKO's Iori River Gallery Forest and Grasslands restoration project, found that a substantial portion of the assessed area exhibited various levels of degradation. These ecological pressures compel most shepherds to supplement natural grazing with purchased feed, increasing costs for smallholders and reinforcing intensive land-use practices that further exacerbate land degradation.

#### **4. Methodology**

This study adopts a mixed-method research design integrating secondary data analysis, systematic value chain mapping, and quantitative trade competitiveness assessment. The primary analytical framework is the ValueLinks methodology (Springer-Heinze, 2007), applied sequentially across functional chain nodes, input supply, primary production, aggregation, processing, and marketing. The enabling environment, comprising regulatory, institutional, and ecological factors, is analyzed as a cross-cutting dimension that conditions performance at every node, following the interdisciplinary approach reflected in SABUKO's research design.

The primary data foundation consists of open source publications: market report covering trade statistics and regulatory requirements for EU and GCC markets; a

primary field study of 71 shepherd households across the Iori Plateau that deployed a semi-structured questionnaire covering demographics, land tenure, livestock management, pasture condition, and sales performance; a comprehensive regulatory mapping document covering EU and GCC export standards for wool and dairy; the pasture degradation assessment providing the ecological baseline for the analysis. These sources are supplemented by Geostat annual agricultural reports, UN Comtrade bilateral trade data as aggregated by the International Trade Centre, FAOSTAT production databases, Eurostat, and EU-Georgia DCFTA implementation documentation.

The Revealed Comparative Advantage index was calculated for three product categories, sheep meat, dairy products, and raw wool, using the Balassa (1965) formula. Three-year average values were used to reduce the influence of single-year trade anomalies. Benchmark comparisons against Australia (a globally competitive sheep exporter) and Armenia (the most directly comparable South Caucasus livestock economy) contextualize Georgia's RCA values. A comprehensive SWOT analysis was constructed by qualitative findings from existing research against the ValueLinks performance dimensions.

## **5. Value Chain Mapping: From Pasture to Market**

The input supply stage encompasses natural forage and pasture access, veterinary medicines and health services, breeding stock, and technical knowledge, all of which exhibit significant deficiencies in the Georgian sheep context. The most fundamental input, natural pasture forage, is chronically inadequate across much of the sector's winter grazing geography. SABUKO's assessment of pastures in Chachuna indicates that a share of grazing land is degraded, meaning that the primary resource for an extensively managed pastoral system is underperforming. As a result, most shepherds must purchase supplemental feed to sustain their flocks, creating additional costs and placing these farms at a structural disadvantage compared to pastoral systems that rely on healthier, more productive grasslands.

Access to veterinary services in Georgia's remote pastoral areas remains limited due to logistical challenges, though routine state veterinary activities such as vaccinations, disease control, and issuance of export health certificates are actively carried out by the National Food Agency. While Georgia regularly exports live animals and certain low-risk animal products, large-scale sheep dairy exports to the European Union are not currently identified. Native breeds such as the Tushetian continue to offer significant competitive advantages through their resilience, disease resistance, and high-quality milk, but these genetic resources should remain documented, and supported by systematic breeding programs, limiting their potential for higher-value market development.

Primary production in Georgia is highly fragmented, dominated by smallholder flocks that are too limited in scale to engage directly in commercial markets, obtain certification, or invest in processing infrastructure without intermediary support.



While most farmers operate small flocks, a few larger operations exist, demonstrating that higher-scale production can enable investment in value addition and formal market participation. Despite modest yields compared to specialized breeds, native Georgian sheep milk possesses distinctive qualities, particularly higher fat and protein content, that support traditional cheese-making and give the products a unique market appeal. Many smallholders engage in informal value-adding activities such as cheese and wool production, which contribute economically but largely remain uncertified, unbranded, and outside formal export channels.

Aggregation, the collection of smallholder output into commercially viable volumes, is the main organizational gap in the Georgian sheep value chain. Unlike the wine sector, which has an established processing network, sheep products lack such infrastructure. Informal traders dominate, buying live animals or raw milk at farmgate prices often too low to cover costs, especially with pasture lease payments. Cooperatives, though promoted by policy and development programs, cover few farmers. Processing is split between traditional household practices and small semi-industrial facilities in urban centers. Commercial sheep-milk cheese is affected by mixing species, reducing quality differentiation. Regulatory constraints are mainly institutional: EU exports require formal veterinary authorization and residue monitoring, while GCC exports require Halal certification approved by Georgian authorities and the relevant GCC bodies (SABUKO, 2020; 2024b). Georgia's sheep exports concentrate on three main corridors: live sheep exports to Gulf and regional markets, especially Saudi Arabia and Azerbaijan, which remain dominant destinations; a sheep meat corridor that is small and volatile with only marginal frozen/chilled meat exports recorded; and a wool corridor that is limited in volume and comparatively declining, even though wool is among the agricultural products that could potentially reach EU markets with proper certification. Cheese exports, though modest in volume, illustrate developmental potential. Traditional sheep-milk cheeses, such as Guda, have successfully entered specialty international markets, including the United States, through diaspora networks and niche distribution channels, demonstrating the feasibility of premium market entry even without formal geographic indications (SABUKO, 2020).

## **6. Export Market Potential and Trade Competitiveness Assessment**

The European Union represents a highly promising market for Georgian sheep products, particularly artisan sheep cheeses and heritage wool items. Declining sheep populations and growing demand for imports of live animals and sheep meat have created favorable conditions for external suppliers. The specialty dairy segment, including artisan and heritage cheeses, has been expanding steadily, with strong demand in countries such as Germany, France, the Benelux region, and the Nordics (Euromonitor, 2023). European consumers in these markets show willingness to pay premiums for traceable, traditionally produced, and provenance-linked products, aligning well with the positioning of Georgian artisan cheeses like Tushetian Guda.

Despite strong market demand, regulatory barriers can fully restrict exports of livestock products to certain international markets. Broad authorization for high-risk products such as live animals, meat, or dairy often requires formal submission to the relevant authorities, compliance with sanitary and residue monitoring standards, and potential on-site audits. These processes typically take time, and until they are completed, such products cannot enter regulated markets. In contrast, other animal-origin products that are authorized, such as wool, honey, or specialty items, may offer niche opportunities in premium or sustainability-focused markets, where provenance and quality can command higher value.

Gulf and regional markets often provide the most immediately scalable export opportunities for livestock products. While established suppliers dominate live animal trade, emerging exporters can develop functional trade corridors, benefiting from geographic proximity and lower logistics costs for fresh or chilled products. Current trade often remains concentrated in live animals, with higher-value certified meat requiring parallel regulatory upgrades: internationally recognized Halal (or equivalent) certification and facility approvals from importing countries. These are technical but manageable challenges, and clear roadmaps exist for market expansion.

Revealed Comparative Advantage (RCA) analysis shows that many countries achieve a comparative advantage only in live animals, while value-added products such as dairy, or wool often underperform relative to their resource base. Comparisons with neighboring or benchmark countries indicate that underperformance typically reflects institutional, regulatory, and infrastructure constraints rather than resource scarcity, highlighting the potential for targeted interventions to unlock higher-value export competitiveness.

## **7. Bottleneck Diagnosis**

The integration of field research, trade data analysis, and value chain mapping identifies principal structural bottlenecks that collectively suppress Georgian sheep product export development. These bottlenecks are interdependent, each reinforces the others, but they are also individually addressable through targeted policy and investment interventions.

**Regulatory Authorization Gap:** Lack of official food safety authorization for livestock, and dairy is a major barrier to accessing premium markets. This institutional-level constraint requires the competent national authority to complete multi-stage processes, including formal submission, regulatory questionnaires, residue monitoring, and potential on-site audits. Without these steps, individual producers or processors cannot independently access regulated markets.

**Smallholder Fragmentation:** Many countries' sheep sectors are highly fragmented, with small flocks and dispersed households, making aggregation into commercially viable volumes costly and challenging. Even where institutional infrastructure exists,



it can partially mitigate fragmentation but cannot replace formal producer organizations.

**Pasture Degradation and Climate Stress:** Environmental degradation and climate pressures, such as droughts, reduce grazing capacity and forage quality. Farmers often must purchase supplemental feed, raising input costs and limiting the ability to position products as environmentally sustainable or heritage-oriented.

**Certification Gaps:** Key export markets, require internationally recognized certification for processed products. Locally issued certificates are often insufficient, preventing expansion from exports to higher-value certified product.

**Underdeveloped GI and Branding Systems:** Distinctive local products often lack Geographic Indication protection, traceability, or systematic branding, meaning culturally and historically unique foods enter markets as undifferentiated commodities. Comparable European heritage products command significant price premiums that remain untapped.

**Infrastructure Deficits:** Basic infrastructure gaps, such as limited access to tractors, water, or storage, constrain productivity, hinder collective investment, and prevent adoption of pasture management or other efficiency improvements.

## **8. Strategic Framework: The 4C Framework for Value Chain Upgrading (2025–2030)**

Based on the bottleneck diagnosis, this paper proposes a strategic framework, designated the '4C Framework' for upgrading the Georgian sheep products value chain over the 2025–2030 horizon. The pillars are: Consolidation of producers, Certification of regulatory compliance and food safety, Commercialization of GCC and EU market opportunities, and Cultural Heritage, GI protection and agri-tourism integration. The pillars are designed to be sequenced yet mutually reinforcing: ecological restoration creates the quality foundation; certification opens market access; commercialization generates revenue; and cultural heritage branding captures price premiums that make the entire system financially sustainable for smallholder producers.

The Framework is built on the simultaneous ecological and organizational consolidation of the sheep sector. Ecologically, rotational grazing and low-cost pasture restoration programs, such as those demonstrated in Chachuna, provide a scalable model for improving pasture across extensive grazing lands. Structured demonstration and peer-learning programs have proven more effective than top-down extension approaches, but scaling these models requires co-financing and formal partnerships with relevant agencies. Establishing multi-purpose producer cooperatives can help aggregate production, negotiate pasture leases, share essential equipment, and access certification and branding programs. Targeting households across strategic regions, cooperatives provide a platform for collective investment, technical support, and market entry. Regulatory alignment is critical for export

growth. Access to EU markets requires formal food safety authorization, including residue monitoring and facility audits, which typically take several years to complete. Market strategy differentiates between volume and value. For volume-driven corridors like the GCC, systematic trade diplomacy, facility recognition, and participation in regional trade fairs can expand market share. For value-driven specialty markets such as the EU or US, premium products like Tushetian Guda cheese should leverage Geographic Indication protection, heritage branding, and participation in major specialty food exhibitions to capture price premiums. Finally, cultural heritage is a central competitive asset. Georgia's transhumance systems and traditional production methods provide unique provenance stories that can be integrated into a unified brand. This brand can link GI-certified products such as cheese, wool felt, under a shared identity, supported by experiential agri-tourism routes that attract international consumers and reinforce the sector's premium positioning.

## 9. Policy and Social Implications

The findings of this study carry implications that extend beyond sectoral trade policy. At the household level, the concentration of value upstream of smallholder producers, combined with land tenure insecurity, degraded common pastures, and limited access to collective marketing infrastructure, constitutes a structural livelihood trap: shepherding families bear the ecological and labour costs of pastoral production while capturing only a fraction of the value their products generate at market. Addressing this requires policy interventions that simultaneously target asset-building (pasture restoration, tenure security, cooperative infrastructure), reduce vulnerability (supplemental feed subsidies during drought, climate-adaptive stocking guidance), and reform the institutional environment (aggregation support, certification subsidies for smallholder groups). These are rural development priorities as much as agricultural ones, and should be reflected in Georgia's rural and agri-environment programming rather than treated solely as trade facilitation matters. The Geographic Indication (GI) dimension, while primarily a market instrument, also has direct social significance for pastoral communities. GI registration formalizes the link between product identity and the community that produces it, protecting smallholders' collective claims against imitation and supporting the intergenerational transmission of pastoral knowledge. Intellectual property authorities should be equipped to treat key pastoral products, such as Tushetian Guda cheese and wool felt, as strategic GI cases, extending existing GI frameworks beyond wine. In comparable heritage food markets, GI-registered products command price premiums averaging 15–40% (Belletti et al., 2017). For smallholder producers operating on thin margins with high input costs, access to such premiums can materially alter livelihood outcomes. More broadly, the Georgian case offers transferable insights for rural development policy in other post-Soviet pastoral economies facing similar configurations of fragmented land tenure, degraded commons, and informal market structures. In contexts including Armenia,

Kyrgyzstan, and parts of Mongolia, analogous constraints suppress smallholder income and drive over-exploitation of communal grazing resources. Interventions that link pasture governance reform to cooperative market access and GI development may offer a replicable model for simultaneously improving livelihoods and reversing ecological degradation.

## 10. Conclusion

This paper has applied a Value Chain Analysis, grounded in a Sustainable Livelihoods perspective, to Georgia's sheep sector, integrating field-level evidence from 71 shepherd households, national production and trade data, and a structural assessment of institutional and ecological conditions. The central finding is not simply that export competitiveness is unrealized, but that the structural conditions constraining market integration are simultaneously the conditions that suppress rural household income and drive pasture degradation. Smallholder fragmentation, tenure insecurity, knowledge deficits in sustainable grazing practices, and captive-type chain governance interact to trap smallholder families at the lowest-value stage of an otherwise commercially viable chain. The analysis identifies a hierarchy of constraints. Regulatory authorization gaps and infrastructure deficits set the ceiling for market access, but the floor of rural vulnerability is shaped by land tenure arrangements, the absence of functional aggregation structures, and the cumulative ecological costs of unsustainable stocking on degraded communal pastures. Addressing the former without the latter risks generating market opportunities that benefit processors and traders rather than the smallholder households who have sustained Georgia's pastoral landscapes for centuries. The proposed 4C Framework, Consolidation, Certification, Commercialisation, and Cultural Heritage, is very meaningful as a rural development instrument if the sequencing prioritises smallholder asset-building and pasture governance reform as preconditions for market upgrading, rather than treating market access as the lead intervention. This reframing is particularly important for Georgia's rural development policy, where conservation and livelihood objectives in landscapes like the Kakheti Steppes can and should be pursued as complementary rather than competing goals. Georgia's pastoral economy is not an outlier. Across post-Soviet transition economies and comparable developing pastoral systems, the tension between customary land use, formal market integration, and ecological sustainability presents structurally similar challenges. The Georgian case, with its unusually rich empirical base from SABUKO's field research, offers a well-documented example of how these tensions manifest at the household level.

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