STRENGTHENING SUPPLY CHAINS FOR HOMEGROWN BOTANICALS

THE CASE OF GEORGIAN BLUE FENUGREEK in Six Akhalkalaki Villages

EXECUTIVE SUMMARY

This case study documents the revival of Georgian Blue Fenugreek (Trigonella caerulea) cultivation in ethnic Armenian communities of Akhalkalaki, Samtskhe-Javakheti. The intervention, facilitated by the ALCP2 and led by the Georgian spice processor Sunelis Sakhli[1] is restoring a culturally embedded but economically marginalized crop into the beginnings of a thriving, inclusive value chain.

Following the post-Soviet collapse of collective agriculture, fenugreek cultivation declined sharply due to the loss of infrastructure, markets, and institutional support. Its production was mostly relegated to the household level with intermittent sales to intermediaries. Targeted support enabled Sunelis Sakhli to modernize processing infrastructure, source fresh raw materials directly from rural producers, and adopt full-plant utilization with differentiated pricing.

These measures have shifted production from informal, household-scale spice farming to structured, market-oriented cultivation. Cultivation areas have doubled, over 60% of suppliers are women. Farmers are benefitting from higher incomes, stable procurement, and the ability to monetize previously discarded plant residues. The intervention demonstrates a replicable model of rural economic development, social inclusion, and sustainable value chain growth.

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[1] *House of Spices I.E. Giorgi Chkoidze, brand name Sunelis Sakhli, Zemo Khvedureti village, Kareli Municipality, Shida Kartli.*

BACKGROUND AND CONTEXT

Georgian Blue Fenugreek (Trigonella caerulea) is a culturally significant spice in Georgia's culinary heritage. The cultivation of Georgian Blue Fenugreek, particularly among ethnic Armenian communities in Akhalkalaki, Samtskhe-Javakheti region has deep roots. Historically, spice cultivation was embedded in rural household economies, supported indirectly by state mechanisms during the Soviet period.

While never a priority crop during the Soviet period, its presence was sustained thanks to kolkhoz[2] and sovkhoz[3] systems, which provided machinery, labor, inputs, and seed-saving practices. This allowed households to continue cultivation despite limited official attention, supported by community-level exchanges, informal village trade and the crop's strong cultural value.

The predictability of land tenure and state-managed input distribution provided further stability. Farmers valued fenugreek for its resilience to harsh climatic conditions, cultural value, culinary usage, and steady contribution to household income. The crop was well-suited to small plots: it required minimal inputs, was naturally resistant to pests, and yielded well even in poor soils without irrigation making it particularly attractive for smallholders with limited land and resources.

The collapse of these institutions in the 1990s, marked by the dissolution of collective farms, loss of mechanization, and disintegration of seed and labor networks, left farmers without the basic infrastructure to continue cultivation. The loss of state support led to the near disappearance of many non-priority crops including Georgian Blue Fenugreek. This systemic breakdown, coupled with shrinking local demand and increased competition from imported spices, caused a sharp decline in fenugreek cultivation. In the absence of commercial interest, Georgian Blue Fenugreek was largely abandoned as a market crop, surviving only in household-level plots and memory.

The absence of stable buyers, established processing systems, value addition, and reliable market linkages resulted in low profitability, high levels of waste, and limited incentives for farmers to expand production.

[2] A collective farm
[33] A form of state owned farm or agricultural enterprise.

REVIVAL OF FENUGREEK CULTIVATION

THE TRANSFORMATION

Suneli Sakhli had been sourcing relatively small amounts of Georgian Blue Fenugreek seeds from Merenia village for over a decade prior to ALCP2 engagement. Other buyers were collecting and exporting to Russia sporadically, the last buyer appearing in Merenia over five years ago. In 2022 Georgian Blue Fenugreek production in the majority of those households was for home use on plots averaging 0.1 – 0.15ha. Approximately fifteen smallholder families with contacts to the company, were selling up to one tonne of seed to the company annually. The families dried the seeds, which produced a product of variable quality mixed with other plant residues. Drying often took place in their houses and in the fields which did not allow for quality control.

Following ALCP2 facilitation in 2023, Sunelis Sakhli visited the village prior to the next production season, to organize a collector who could communicate with HH's that he was ready to buy whole plants and seeds and giving clear instructions not to dry the seeds, to avoid sunlight, dirty areas or areas contaminated by animals when storing the fresh plant and seed for sale. He also indicated that he would buy as much as they could produce and he repeated the process in two more villages.

By the following year 2024, three more neighbouring villages decided to devote part of their farm plots to cultivating Georgian Blue Fenugreek knowing that what they grew would be purchased by the collector in Merenia. The company also provided seed to new growers and those who needed more seed for expansion and further instruction on production.

In 2025 these six villages now have one hundred and eighty households who have started or expanded their production of Georgian Blue Fenugreek to supply Sunelis Sakhli. Going forward the company intends to expand purchasing in more Akhalkalakhi villages. Instructions to pickers now incorporate the ALCP2 authored Sustainable Picking Guidelines.

ALCP2 FACILITATION

The process began in 2023, when, with ALCP2 co-financing, the company constructed a new modern 450 m² processing facility equipped with advanced drying and storage systems. Previously they had been operating from a domestic house and could not expand any further. The support included the acquisition of modern equipment, expanded warehousing, improved food safety compliance, and the introduction of branded packaging. These upgrades increased sourcing capacity, processing volumes, operational efficiency, and product quality.

Sunelis Sakhli shifted from purchasing pre-dried botanicals to sourcing fresh raw materials directly from rural producers. It also allowed the move to purchasing the entire plant (as Georgian Blue Fenugreek does also utilize stems and pods), whereas before only seeds were purchased or sold.

Full-plant utilization practices, enable previously discarded stems, leaves, and residues to be converted into marketable products. It drastically reduces crop waste, monetizes all above-ground biomass, considerably increasing sourced product per plot. The business benefits from being able to control the quality of drying and reducing wastage by approximately 20-30%. The business can enter better markets, due to confidence in quality and supply and thus pay the same amount per kilogram for fresh produce as for dry, to ensure quality supply. To maintain a stable supply the company has established verbal contract agreements with their producers. These improvements have directly boosted business profitability, reducing transaction costs, laying the foundation for producing a wider range of spice blends.

The ALCP2 also produced a *Sustainable Picking Guidelines* for use with wild and homegrown pickers across Georgia to ensure sustainablitly of wild populations and offering practical guidance to picking, basic storage and processing standards.

IMPACT

BUSINESS IMPACT

Increased Business Profitability – Product diversification and full-plant utilization have boosted profitability. Compared to 2022–23, the company increased volumes by 122% (167 tons) and suppliers by 373% (946). In the first half of 2025, 108.3 tons of botanicals were collected, up from 30.7 tons in the same period in 2024. Due to the higher quality and stronger market demand for the final product in more formal outlets, the company has been able to sell for more per kilo Strategic pricing helped navigate competition, and higher sales volumes increased net profits. Average product markups rose from 20–30% in 2022 to 30–50% in 2025, reflecting improved processing, packaging, and access to higher-value markets.

Product Diversification - Investments by Sunelis Sakhli in modern processing infrastructure and equipment have transformed how the company handles Georgian blue fenugreek and other botanicals, enabling full plant utilization on-site and turning every part of the plant into a source of revenue and efficiency. Stems, leaves, and powdery residues, previously discarded, are now incorporated into blended spice mixes such as Svanuri Salt and Kharcho Spice — products increasingly sought after by domestic processors and exporters. Full-plant utilization allows for a broader range of spice blends, adding value at every stage. These products are particularly valued by meat processors and semi-prepared food manufacturers for their strong aroma and flavor. Local fenugreek also plays a crucial role in balancing blends with imported spices. cost-effective, and scalable.

Reduced Transaction and Operational Costs – Streamlined procurement, mechanized processing, and internal handling reduced post-harvest losses by approximately 20–30%.

Operational efficiencies lowered sourcing and labour costs, enabling more reliable and cost-effective production.

Improved Market Access and Growth – Sunelis Sakhli expanded its market reach by establishing new buyer relationships, diversifying sales from wholesale to retail, enhancing product quality and branded offerings, and improving logistics, including direct delivery via Georgian Post. These measures strengthened consumer trust, boosted repeat purchases, and increased visibility across multiple sales channels. In January–June 2025, domestic demand accounted for 91% of total sales, while exports made up 9% (10 tons), down from 29.5% in the same period in 2024—a shift reflecting stronger local demand, favorable pricing, and reliable supply. Strategic partnerships with semi-processed food producers, restaurants, and retail outlets further increased demand and market presence. Current export markets include Armenia, Ukraine, and Russia (via intermediaries), with EU access as a future opportunity supported by ongoing HACCP implementation and facility upgrades. Dubai is also being explored, with samples sent and steps underway to enter the UAE market.

TARGET GROUP IMPACT

Following ALCP2 facilitation with Sunelis Sakhli, the Georgian Blue Fenugreek value chain in six villages in Akhalkalaki has undergone a major transformation, moving from HH production to planned production for guaranteed sale. From 2023 to 2025, Sunelis Sakhli has established procurement relationships with predominantly Armenian smallholder producers, sixty percent of whom are women in Merenia and five other villages. Women have traditionally been in charge of spice production and HH plots while men have agency over the main potato crop. The company offered incentives to revive fenugreek cultivation, which were:

- Secure procurement at fair, differentiated prices,
- Opportunities to sell residual biomass,
- Input provision (seeds),
- Tailored capacity-building (instructions, distribution of the Picking Guidelines, with meetings and trainings to improve the quality of the product.)

These incentives have seen the accrual of considerable impact in relatively short length of time and impact is expected to continue to grow at a similar pace.

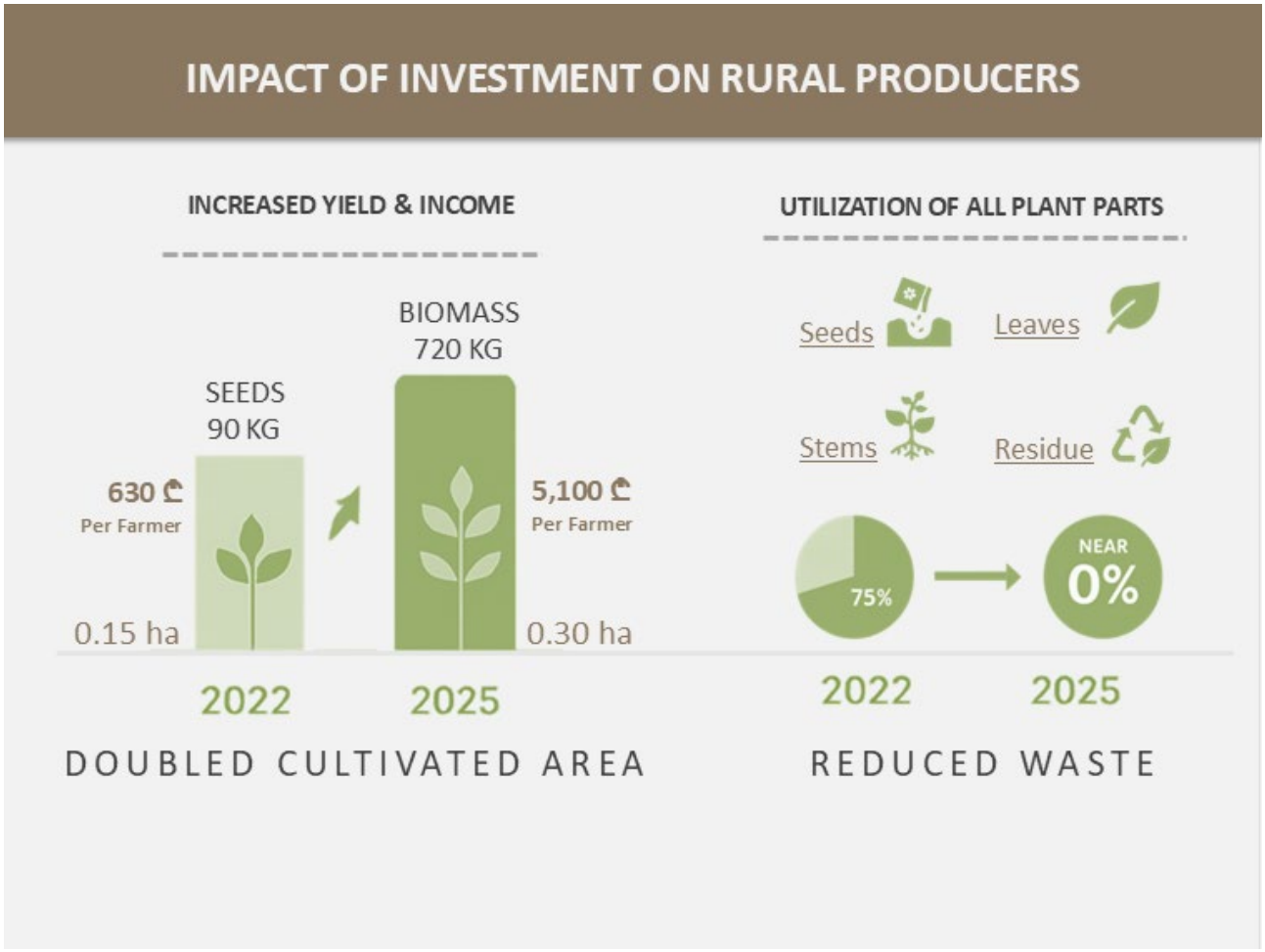


Figure 1 Impact of the Investment on Rural Producers

Increased profit - Fenugreek's profitability on small plots, combined with producers' historic familiarity, and verbal contracts guaranteeing purchase restored confidence amongst producers. In Merenia alone thirty-four households, twenty percent of Merenia's total households now supply to Suneli Sakhli, and half of these households have increased the size of their plots. Women make up over 60% of suppliers, taking leading roles in sorting, sieving, and bundling. Household incomes are shared equitably, directly supporting welfare.

On a typical 0.15-hectare plot, profit has increased considerably as all biomass is now being purchased from the plot; from 90 kg of seeds to approximately 360 kg of combined plant material, equaling 2,550 GEL value in 2025. The company has passed on higher prices per kilo to the pickers, to ensure quality supply. Prices per kilo for seeds have doubled from 7 GEL per kilo in 2022 to 15 GEL per kilo in 2025,. Additional components — stems (3 GEL/ kg), leaves (5 GEL/ kg), and powdery reside (7 GEL/ kg) have further increased income from the plots..

Reduced Labour and Time Saved - Supplying fresh rather than dried product means that rural producers are minimizing labor and reducing time spent on handling and drying, which generally took from 5–to 0 days. For many, this translates into allowing them time and energy to cultivate a larger plot.

SCALING AND REPLICATION

Encouraged by rising prices, stronger market access, stable demand and the opportunity to sell all plant parts, more families in Akhalkalaki villages are now cultivating Georgian blue fenugreek. One hundred and eighty households in six villages supply to Suneli Sakhli in 2025, from fifteen in 2022. Average cultivation area has doubled from 0.15 to 0.30 hectares between 2022 and 2025. Yields have expanded by an average of 500% of total biomass per farmer—while waste has fallen from 75% to nearly zero. This combination of higher productivity, differentiated pricing, and reduced losses has resulted in farmer income increasing nearly four times, reaching 3,750 GEL per producer household in Merenia in 2025 for a 0.3ha plot.

Detailed metrics on plot size, yields, income, waste reduction, and inclusion indicators are provided in *Table 1: Georgian Blue Fenugreek Comparison 2022-2025 Production Metrics* in the Annex.

COST BENEFIT ANALYSIS Potatoes versus Fenugreek

Fenugreek cultivation in Merenia village is expanding as a high-return, low-input alternative to other forms of cultivation, particularly potatoes. Current Land use is: 80% potatoes, 15% spices, 5% other crops including carrots, beets, and barley. While potatoes remain dominant, particularly on technically equipped plots, Georgian Blue Fenugreek cultivation is steadily gaining ground, offering a high-return opportunity for smallholder farmers with limited resources.

Georgian Blue Fenugreek cultivation on 0.15 hectares presents a more profitable and sustainable alternative to potato farming, particularly for smallholders. Despite its lower yield, fenugreek generates significantly higher returns due to reduced production costs and strong market demand for the plant's various parts. While it requires more manual labor, it compensates with lower reliance on external resources such as fertilizers, machinery and water. The crop offers nearly four times higher revenue-to-cost ratio (3.99 vs 2.06) and almost threefold profitability (299% vs 106%) compared to potatoes. This makes it a compelling choice for resource-constrained farmers seeking resilient and cost-effective income sources.

For a detailed comparative analysis of production costs, revenues, and profitability, please see *Table 2: Cost-Benefit Analysis – Potatoes vs. Georgian Blue Fenugreek (0.15 ha plot) and Table 3: Cost-Benefit Comparison (per 0.15 ha)* in the Annex.

SYSTEM CHANGES AND VALUE CHAIN TRANSFORMATION

The ALCP2-facilitated intervention led to a series of interlinked systemic shifts across the Georgian Blue Fenugreek value chain:

- **INTEGRATED CROP UTILIZATION AND INCENTIVE STRUCTURES**: The introduction of full-plant harvesting allowed for the monetization of seeds, stems, leaves, and residue, reducing waste and increasing income per hectare. A differentiated pricing model incentivized quality, volume, and diversification. Previously discarded plant parts became marketable, transforming waste into revenue and enhancing environmental sustainability.
- **SUPPLY CHAIN INVESTMENT**: Input provision[4] and capacity building[5] represent supply chain investment and are now integrated into the firm's operations and sustained independently.
- **MODERNIZED INFRASTRUCTURE TO MARKET ACCESS**: The relocation to a modern facility with expanded drying and storage capacity streamlined operations, improved food safety, and increased sourcing volumes. These upgrades enabled access to premium domestic and export markets and supported traceable, branded packaging. The company now regularly supplies retail chains and producers in Georgia and exports via intermediaries to Armenia, Ukraine, and Russia.
- **INCLUSIVE AND STABLE SOURCING MECHANISMS**: Procurement based on verbal agreements replaced irregular transactions, securing consistent supply from smallholder farmers. Incentivized pricing ensures quality supply. Emphasis is placed on including ethnic minorities and women who were traditionally involved in spice production, men traditionally have agency over the main potato crop.. Over 60% of suppliers are ethnic Armenian women from remote villages.
- **REPLICATION AND BUSINESS DIVERSIFICATION** The visibility of benefits and embeddedness within local traditions has led to spontaneous uptake in nearby villages. Farmers outside the initial intervention zone began adopting fenugreek cultivation, signaling strong potential for scale and sustainability. The company is also using the model for other spices in other parts of Georgia. Beyond fenugreek, rural households are increasingly cultivating complementary spices such as coriander, dill, saffron, basil, and peppers[6] to supply Sunelis Sakhli. These crops provide additional revenue streams, allowing families to diversify production and manage risk.

4 Seeds to adopt better production practices and increase production volumes
5 To further enhance quality, reduce environmental waste, promote scale-up and sustainability
[6] Key cultivation areas include Akhalkalaki for Georgian blue fenugreek, Gachiani for coriander and fenugreek, and Shida Kartli for coriander, dill, saffron, basil, and peppers.

LESSONS LEARNED

Small-scale farmers are quick to adopt innovations when they see tangible benefits among peers.

Embedding market access within culturally familiar crops boosts uptake and long-term sustainability.

Scaling is most effective when models align with local knowledge, labor patterns, and environmental conditions.

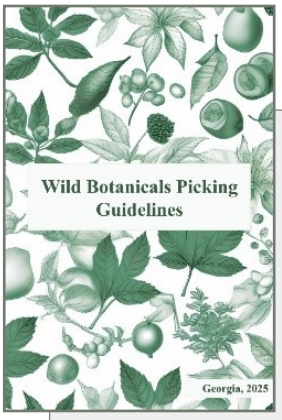
ENVIRONMENTAL AND CLIMATIC CHALLENGES

Despite its environmental advantages, recent declines in spice yields have been reported. Farmers attribute this to environmental factors, particularly chemical drift and soil contamination from nearby intensively sprayed potato fields. Moreover, the crop is highly sensitive to climatic extremes such as hailstorms and heavy rainfall, which can significantly impact yields and complicate production planning. Recommendations include pesticide regulation, farmer education on eco-friendly practices, and climate-adaptive farming.

CONCLUSION

With ALCP2 facilitation, Sunelis Sakhli is transforming Georgian Blue Fenugreek from an informal household crop into a formal, inclusive value chain with growing income potential and minimal environmental impact. Farmers, particularly women and ethnic minorities, now benefit from higher incomes, diversified revenue sources, stable buyer relationships, and increased productivity.

The model demonstrates a practical, scalable and sustainable approach to strengthening value chains.. The case exemplifies how strategic investment in processing infrastructure, inclusive sourcing models, and local knowledge integration can revitalize neglected crops, promote a more sustainable use of natural resources and promote economic resilience in marginalized communities.



Please go to www.alcp.ge Library ALCP2 (2025) Wild Botanicals Picking Guidelines. Alliances Caucasus 2 Programme. For the full English and Georgian versions.

ANNEX

This table illustrates changes in average plot size, plant utilization, yields, prices, income, waste reduction, geographic coverage, and inclusion indicators between 2022 and 2025, reflecting the shift from manual, seed-only processing to a diversified, mechanized mode i.e. using tractors for larger plots

Table 1: Table 1: Georgian Blue Fenugreek 2022-2025 Production Metrics

		2022[7]	2025
Average Plot Size (ha)		0.15	0.30
Utilized Parts		Seeds only	All plant parts
Yield per ha (kg)	Seeds	600	600
	Stems	0	1000
	Leaves	0	300
	Residue	0	500
	Total	600	2400
Yield per farmer (kg)	Seeds	90	180
	Stems	0	300
	Leaves	0	90
	Residue	0	150
	Total	90	720
Prices (GEL/ kg)	Seeds:	7	15
	Stems:	0	3
	Leaves:	0	5
	Residue	0	7
Income per ha (GEL)		4,200	17,000
Income per farmer (GEL)		630	5,100
Waste %		75	0
# of Villages Covered		1	6
% of Ethnic Minorities		15	30[8]
% of Women		50	60
Processing Model		Manual, seed-only	Mechanized, diversified

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7 2022 is a baseline

[8] With the introduction of inclusive sourcing and transparent pricing, ethnic Armenian farmers in the remote villages of Akhalkalaki were, for the first time, able to access formal markets, see real income for their harvests, and confidently expand their cultivation.

COMPARATIVE COST-BENEFIT ANALYSIS

Table 2: Cost-Benefit Analysis – Potatoes vs. Georgian Blue Fenugreek (0.15 ha plot) ** Number of asterisks indicates how many times the activity is performed annually*

NR = Not Required (cost is 0 GEL)
ML = Manual Labor (performed by farmer or household; cost is 0 GEL)

ACTIVITY/ COST IN GEL	POTATOES	FENUGREEK
Plowing	**135	67
Harrowing	45	NR
Seed	405	46.32
Sowing	67	ML
Irrigation	***225	75
Fertilizer (NPK)	135	NR
Weeding	NR	300
Harvesting	67	150
Field collection	150	NR
Drying/ Cleaning/ Sieving	NR	ML
Total Cost	**1,230**	**638**

YIELD		KG	WASTE %	PRICE GEL/ KG	REVENUE	FARMING COSTS	NET PROFIT
Potatoes		3,750	10	0.75	2,531	1,230	1,301
Fenugreek	Total:	360	0	N/ A	2,550	638	1,911
	Seeds	90		15	1 350		
	Stems	150		3	450		
	Leaves	45		5	225		
	Residue	75		7	525		

Table 3: Cost-Benefit Comparison (per 0.15 ha)

CALCULATIONS IN GEL	POTATOES	FENUGREEK
Total Cost	1,230	638.82
Revenue	2,531	2,550
Net Profit	1,301	1,911
Revenue-to-Cost Ratio	2.06	3.99
Profitability %	106	299