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European Bank
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POTENTIAL BREWING FOR AZERBAIJANI AND GEORGIAN TEA INDUSTRIES



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POTENTIAL BREWING FOR AZERBAIJANI AND GEORGIAN TEA INDUSTRIES

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It is based on the key findings of two sector reviews of the Azerbaijani and Georgian tea sectors carried out by FAO in 2019-2020 at the request of the European Bank for Reconstruction and Development. Its objective is to provide an overview of the tea sectors of Azerbaijan and Georgia, sector challenges, potential environmental risks associated with their planned expansion and potential for investment in the sector.

The report was produced under the guidance and overall supervision of Dmitry Prikhodko (Senior Economist, FAO) with Boris Sterk (Economist, FAO) as the lead author. Substantial contributions were provided by Jacopo Monzini (Natural Resource Management and Climate Change Specialist, FAO), John Snell (Tea Industry Expert), Alexandra Sokolova (Economist, FAO), and Ekaterina Krivonos (former Economist, FAO).

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Abbreviations and acronyms

CIS	Commonwealth of Independent States
CTC	Crush-Tear-Curl
FIRR	Financial Internal Rate of Return
IGG	Intergovernmental Group
ILO	International Labour Organization
L&B	Leaves and a bud
PA	Pyrrrolizidine alkaloids

Foreword

Tea has a long tradition of cultivation in Azerbaijan and Georgia dating back to the 19th century. Tea production in the two countries reached a peak in the 1980s when they supplied the bulk of tea in the former USSR and made the Soviet Union the fourth largest tea producer in the world after India, China and Sri Lanka. The structural changes that followed the collapse of the Soviet Union in the early 1990s led to a dramatic decline of the two countries' tea sectors which, with a total combined production of around 3000 tonnes, now account for just under 0.05% of global tea production.

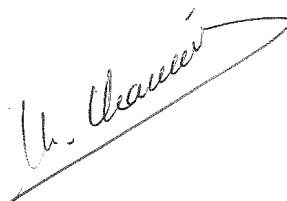
However, interest in tea production in Georgia and Azerbaijan has increased in recent years and, in an effort to revive their once thriving tea sectors, governments have adopted sector development programmes that provide for support to primary tea production. In 2018, the Azerbaijan State Programme for the Development of the Tea Industry was approved, with the objective of increasing the tea productive area to 3 000 ha and production to 8 500 tonnes by 2027: more than 8 times the 2018 output, while the Georgian Tea Rehabilitation Programme adopted in 2016 aims to stimulate the rehabilitation of up to 7 000 hectares of abandoned tea plantations over the coming years.

In spite of a long tradition and accumulated know-how of tea production and processing, there is little doubt that investments in both technology and knowledge will be required for the Azerbaijani and Georgian tea sectors to grow in a successful and sustainable way. Production focused on efficiency, quality and mindful of shifts in consumer preferences on global markets, but also of potential environmental risks, will be critical in achieving this goal.

It is in this spirit that this publication of the Food and Agriculture Organization of the United Nations (FAO) and the European Bank for Reconstruction and Development (EBRD), aims to provide a general overview of the Azerbaijani and Georgian tea sectors, with a focus on key sector aspects such as financial profitability, quality, international competitiveness and environmental sustainability. Ultimately, our hope is that it will serve as a basis for informed policy and investment decisions to national and international stakeholders with an interest in this promising sector.



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Azerbaijani and Georgian tea sectors at a glance

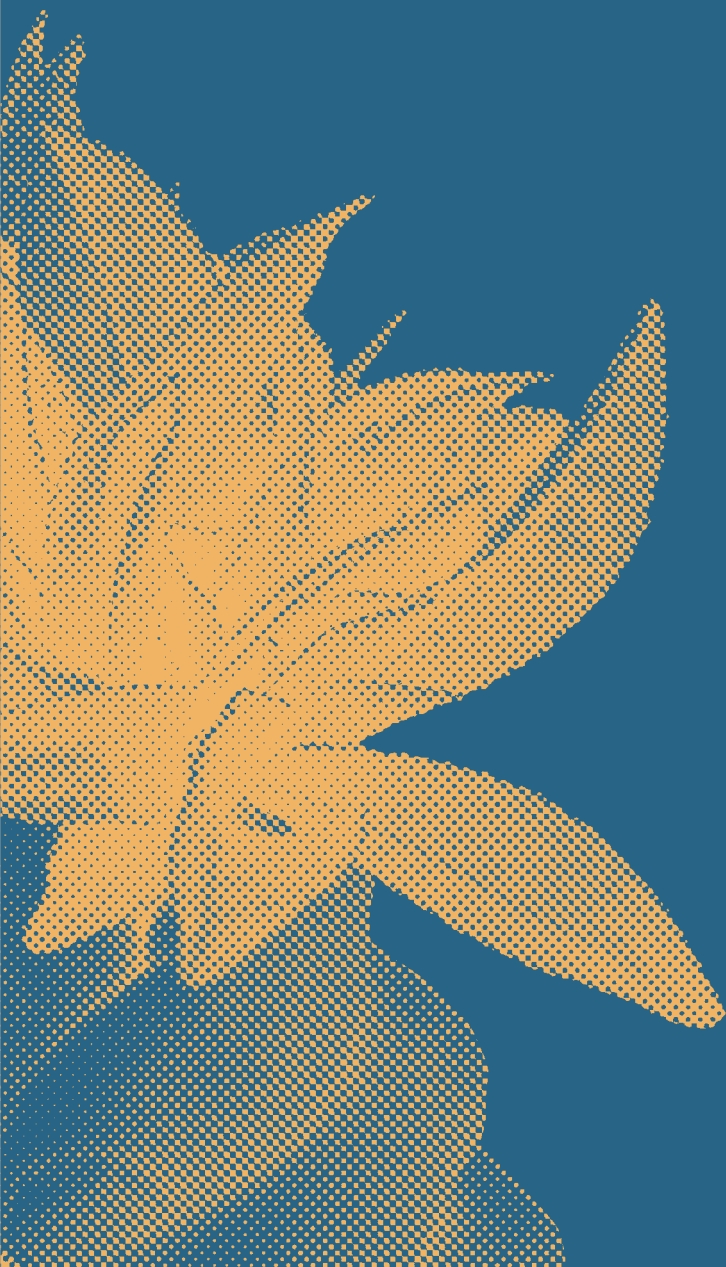


Table 1

The tea sectors of Georgia and Azerbaijan in a comparative perspective

		GEORGIA	AZERBAIJAN
Key indicators			
Tea area (ha)	2018 planted/ rehabilitated	1800	1130
	2018 productive	N/A	660
	Target	7 000 rehabilitated	3 000 total
Production (t)	Current (2018)	1700	900
	Target	N/A	8 500
Gross Margins (USD/ha)	Baseline	284	569
	Optimistic scenario	3720	4220
Alternative Crops	Berries, hazelnuts, citrus fruit	Oranges, rice, tomatoes, subtropical fruit	
Summary of similarities and differences			
Main similarities	<ul style="list-style-type: none"> • historical legacy of tea production; • good theoretical knowledge of the crop but widespread issues at the production level (especially in terms of harvesting practices and post-harvest care of leaf); • unique tea organoleptic attributes but room for improvement in meeting international quality standards; • strong potential for organic production; • geographic proximity to traditional (CIS countries) and high-value (EU) markets; • currently limited economic significance of the tea sector; 	<ul style="list-style-type: none"> • limited financial attractiveness of tea and presence of more attractive alternative crops; • combined primary production with processing capacity can improve considerably the overall competitiveness of made tea production; • current processing overcapacity and use of mostly outdated tea machinery • high production cost in comparison to main tea producing countries (especially labour costs); • issues with labelling practices and limited attention to rules of tea origin; • presence of risks related to climate change that might require changes in agronomic practices. 	
Main differences	<ul style="list-style-type: none"> • tea sector development mostly focused on the rehabilitation of old plantations; • limited domestic tea consumption; • potential mostly in terms of exports; • currently exports tea to a variety of markets; • underdeveloped potential for green tea production for export; • irrigation currently not required in most cases, but might become needed in the future due to climate change; 	<ul style="list-style-type: none"> • tea sector development mostly focused on new plantations; • high domestic consumption; • opportunities also on the domestic market; • currently exports tea mostly to Russia and Turkey; • potential for improving the competitiveness of black tea production; • irrigation currently needed in most cases. 	

SOURCE: Authors, 2021

Introduction



GLOBAL CONTEXT

Although global tea production increased from 4.3 to 6.5 million tonnes between 2009 and 2019, this was mostly due to the population growth in producing countries and not to consumption growth in high-value importing markets (FAOSTAT, 2021). After having increased for several decades, the global tea trade has stagnated since 2010 at around 2 million tonnes per year, equivalent to about USD 7.7 billion (2019). Kenya is the largest exporter in terms of volume (475 000 tonnes), however, China is the most significant exporter in terms of value (USD 2 billion) and together with the other two major exporters – India and Sri Lanka – the four countries account for two-thirds of the global tea exports according to value.

By 2027 the demand for and production of green tea is expected to grow at a rate of 7.5 percent per year and to remain considerably higher than black tea (2.2 percent per year for the same time period). In turn, the specialty¹ and the health and wellness² sub-categories are the areas where most of the growth is occurring globally, with European and North American markets leading the way. Within these markets *Camellia Sinensis* ('real tea') is evolving from the lower-priced teabags towards more leafy types (orthodox manufactured teas) and green teas. However, the largest increase and strongest competition of tea is observed in the herbal drink sector, predominantly within the 'functional' group of products in the health and wellness category.

In terms of price developments, the average FAO Composite Tea Price remained stable over the last decade until 2014 when there was a 5.3 percent decline, mainly due to the weakening of the Crush-Tear- Curl (CTC) tea prices (FAO, 2018). The prices recovered in 2015, and FAO projections suggest that supply and demand of black tea will most likely find an equilibrium by 2027 at the price of USD 3.0 per kg, with a continued decline in real tea prices (adjusted for inflation) in the medium-term. (Figure 1).

An expected stronger demand for green tea and health and wellness teas as well as for high-quality black tea in developed markets, suggests that these product categories should be the areas of focus for the Azerbaijani and Georgian tea industries during the next decade.

1 Teas sold in counts of less under 40 servings per packet.

2 These products that claim a functional effect on the body.

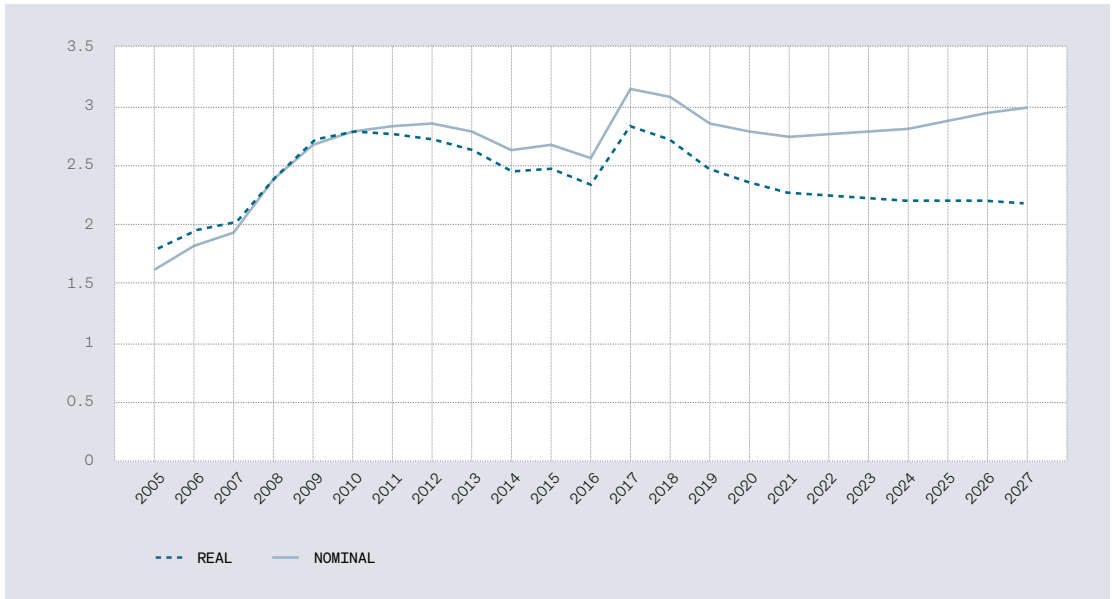


Figure 1
FAO Tea Prices (USD/Kg) baseline projections to 2027

SOURCE: FAO, 2018

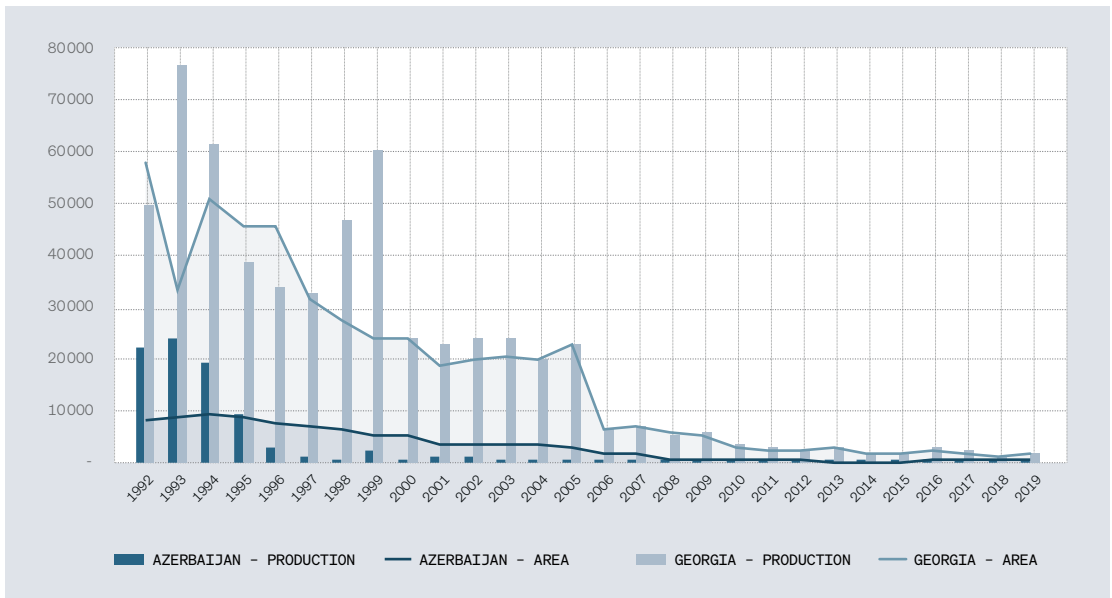


Figure 2
Evolution of the tea harvested area (in ha) and production (in tonnes) in Azerbaijan and Georgia

SOURCE: FAOSTAT, 2021

RECENT EVOLUTION AND CURRENT SITUATION IN GEORGIA AND AZERBAIJAN

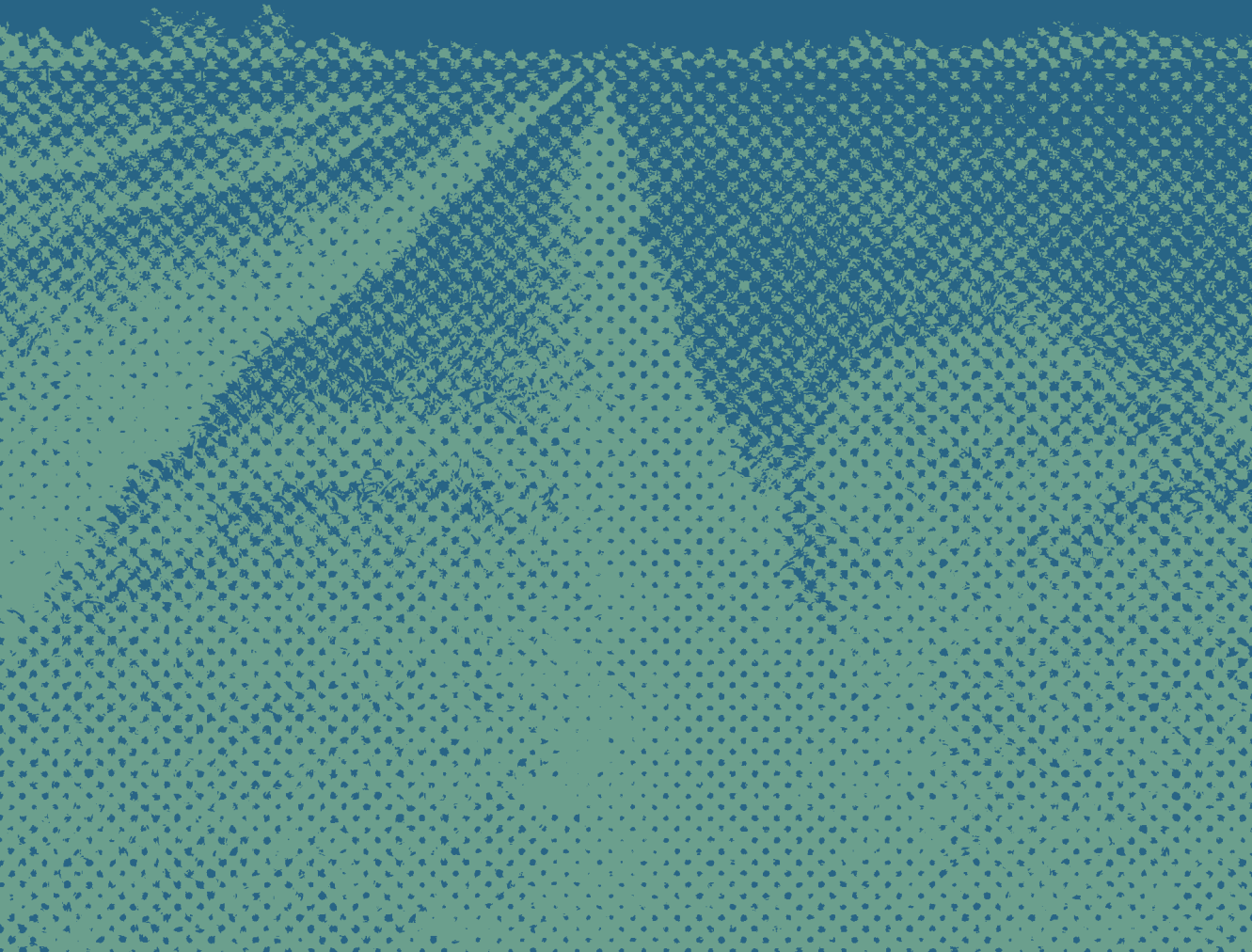
Tea has a long tradition in Azerbaijan and Georgia, where tea has been produced since the 19th century. While still part of ex-USSR the two countries became the main tea producers in the former Soviet Union and reached a peak in production in the mid 1980s, representing over 95 percent of Soviet tea production and around 75 percent of its total tea supply. Georgia led the way with a production of about 150 000 tonnes from an area of over 65 000 ha, followed by Azerbaijan, which produced around 35 000 tonnes from 13 000 ha.

The breaking up of the USSR led to loss of traditional markets and a decline in the tea sector in both countries (Figure 2). As of 2019, only about 1 900 ha of the tea plantations were productive in Georgia and 1 100 ha in Azerbaijan, producing about 2 000 and 900 tonnes of green tea leaves or about 500 and 225 tonnes of made tea, respectively.

More recently, tea production in Azerbaijan and Georgia has witnessed a certain revival with the tea productive area increasing from 600 ha in 2010 to 1 100 ha in 2019 in Azerbaijan, and from 800 ha in 2014 to 1 900 ha in 2019 in Georgia. However, in the case of the tea leaf output the increase has been slower, as tea plants take several years to become fully productive (about seven to eight years for a new plantation and about four years for a rehabilitated one).



Production



POLICY CONTEXT

Recognizing the importance of the sector and the long tradition of tea production, both Azerbaijan and Georgia have recently adopted tea development programmes with specific support measures in order to stimulate the sector development. However, the stated objectives and specific support mechanisms to achieve them differ.

In Azerbaijan, the State Programme for the Development of Tea Industry (2018-2027), approved by an executive order of the president of Azerbaijan, aims for an increase in the tea productive area to 3 000 ha, setting a production target of 8 500 tonnes by 2027. Current state support measures, approved in 2018 and becoming effective on 1 January 2020, provide for a subsidy of AZN 700 (USD 410³) per hectare per year for the first seven years from planting and AZN 240 (USD 140) per hectare per year thereafter. For new plantations established before 2019, a subsidy of AZN 240 applies independently of the current age of the plantation. These new subsidies aim at stimulating investments in new tea plantations and replacing various pre-existing agricultural input-specific subsidies. Moreover, cooperatives of over 50 ha are entitled to an additional 10 percent payment on top of those mentioned above.

While our estimates suggest that the total subsidy value of AZN 4 900/ha (USD 2900/ha) over seven years accounts for slightly less than 50 percent of the total required investment in a new tea plantation, risks to smallholder engagement in tea production are still high considering the relatively low returns from tea as compared to other crops.

In Georgia, the government adopted a Tea Rehabilitation Programme in 2016. Unlike in the case of Azerbaijan, this programme aims to stimulate the rehabilitation of abandoned tea plantations by co-financing weeding, deep pruning, fertilization and other works⁴, with the objective to reach up to 7 000 ha of rehabilitated tea plantations over the next years. The programme is managed by the Agricultural Projects Management Agency (APMA) of the Ministry of Environmental Protection and Agriculture (MEPA).

The maximum subsidy amount is capped at an estimated average cost for rehabilitation at GEL 2 500 (910 USD) per hectare⁵. The actual payments depend on land ownership and legal status – from 60 percent of the maximum amount paid to eligible physical persons who own their land and up to 90 percent for cooperatives producing on leased or state-owned land. These grants are only accessible to farms between 5 and 300 ha until 2020. Our estimates show that accrual investment costs may reach GEL 8 000 (or USD 2 900) per hectare, meaning that with this type of scenario co-financing by the state covers between 25 and 30 percent of total costs. Fencing and other investment costs that are required to obtain product certification are often excluded from the programme. This scenario is similar to that of Azerbaijan, as it represents the difficulties facing smallholders' participation in the programme as the remaining investment in the rehabilitation of a tea plantation remains significant.

³ An exchange rate of AZN 1 to USD 0.59 is assumed throughout this report (valid as of May 2021).

⁴ As per the programme, operations that can be co-financed are: plantation weeding, processing of heavy and/or semi-heavy pruned materials at the plantation area or their removal, inter-row tillage, fertilizer and pesticide application, cleaning of drainage channels (if necessary), primary hoeing (if necessary) and secondary hoeing (if necessary).

⁵ Including VAT or GEL 2,050 GEL (747 USD) after VAT (net).

TEA PRODUCTION PRACTICES

With tea plantations situated between 38°N and 43°N, Azerbaijan and Georgia are amongst the most northern and significant tea producing areas in the world. This means that tea harvesting is limited to a period of five to six months – May to September-October⁶ – as tea plants are in a period of dormancy throughout the rest of the year due to low temperatures. In contrast, major global tea producers such as India, Sri Lanka or Kenya are capable of producing tea year-round and can thus achieve higher yields. However, the long dormancy period of Azerbaijani and Georgian tea plants creates a potential for the production of unique teas, which gives them distinct organoleptic qualities.

In both countries, coastal areas offer the most suitable agro-climatic conditions for tea production (in particular, high humidity and relatively mild winters) where most of the tea plantations are located. Lower precipitation levels along the Caspian coast compared to that of the Black Sea, especially during the summer months, means that while Georgia is currently able to produce rain-fed tea, most tea plantations in Azerbaijan are irrigated (with the exception of rare cases of higher-altitude tea plantations). Another difference between the two countries is that tea plantations in Georgia are often situated in close proximity of livestock grazing areas and therefore, fencing the plantations to protect them from animal encroachment is frequently required, whereas in Azerbaijan this is not necessary. As previously mentioned, fencing can often be the costliest investment when rehabilitating a tea plantation.

On the other hand, production practices in terms of plant stock, cultivation, harvesting, post-harvest handling and processing present a number of similarities, detailed below. In turn, recommendations on potential improvements in these practices are proposed at the end of this publication.

Plant stock: The majority of tea bushes are the *Camellia Sinensis*, variety *Sinensis*. This plant is best suited to Orthodox tea manufacture and to other less oxidized manufacturing styles, including oolong, green and white.

Cultivation: Both countries cultivate bushes adapted to the short growing seasons and to harvesting methods determined during the Soviet era – with no single central stem and a dome shaped bush – mostly suited to mechanical harvesting (and over-wintering). Planting patterns are particularly dense with rows that are about 1.5-2.0 metres apart and bushes within a row are very closely planted (25-50 cm). However, gaps between rows are large and represent issues with respect to weed growth and soil moisture evaporation.

In both countries, producers claim to be producing largely chemical-free tea, that is, without resorting to the use of fertilizer and pesticides. However, only a few have sought organic certification.

Harvesting: In both Georgia and Azerbaijan there is a deeply ingrained belief that tea harvesting mechanization inevitably results in the deterioration of tea quality. Indeed, the production of high-grade, premium teas require meticulous hand plucking of only the highest quality tea leaves. However, in both countries significant issues related to the harvesting process undermine the quality of the final output. In both Azerbaijan and Georgia most tea producing factories

⁶ Georgia generally has a slightly shorter season (by about a month), but this can vary from year to year.

appear to be focused on the production of low-grade tea (harvesting up to five or six leaves and a bud), which accounts for the majority of their total production (over 80 percent).

In Georgia, about two-thirds of tea production is estimated to be low-grade tea (five to six leaves and a bud) and the remainder is mid- and high-grade tea (two to three leaves and a bud) for the high-end domestic and foreign markets. Almost all large farms and factories also harvest tea bushes for the production of tea bricks (Agura or Lao tea as known in Georgia). It is estimated that about one-third of all tea produced in Georgia in 2019 was intended for the manufacturing of tea bricks. Most of this is done during the last harvest of the year in October, and is also considered to be pruning. As a result, the material harvested includes not only leaves but also branches of the tea bushes. This very low-quality tea is sold to CIS export markets (e.g. Mongolia, Kazakhstan).

Post-harvest leaf handling: In spite of generally good agronomic knowledge, there is an endemic issue with respect to the understanding of the green leaf shelf life and leaf handling in both Georgia and Azerbaijan. Green leaves are often left for up to 24 hours, sometimes even 36 hours, before they enter the factory for processing. This leads to the premature oxidation of tea leaves in a non-controlled environment and results in significant deterioration of the quality of the final product.

Processing: Despite options to produce different kinds of tea from the planting stock, both countries have a legacy of black tea production. The significant processing capacity that was inherited from the Soviet period is largely obsolete, energy inefficient and under-utilized, and has a negative impact on the cost of production and quality of output.

In spite of good agronomic knowledge, the lack of attention to green leaf control (plucking standard, time from field to factory, control of wither) often results in the production of a relatively plain and sometimes even sour character tea when consumed in the so-called Western style (two to three grammes per cup, fresh boiled water, steeped three to five minutes).

PROFITABILITY OF TEA & ALTERNATIVE CROPS

Crop profitability per unit of land is a key factor influencing land use decisions by farmers. Our findings suggest that as per the currently dominant production methods (Scenario 1 for both countries, Figure 3) tea profitability per hectare is low in both origins. However, tea profitability per hectare in Azerbaijan and Georgia varies considerably, depending on the production and harvesting practices adopted. After careful examination of improvement options on a case-by-case basis (Scenarios 2-3 in Azerbaijan and Scenarios 2-5 in Georgia) the analyses show that changes in existing practices can improve tea profitability considerably. However, there appear to be other crops – such as oranges in Azerbaijan or blueberries in Georgia – that are more financially attractive to the farmers in these tea growing regions. Our Financial Internal Rate of Return (FIRR) estimates over a period of 15 years assuming 10% discount rate. (Figure 4) show a contrasting picture between Azerbaijan and Georgia, as models for Georgia assume there is no investment in land for a rehabilitated plantation (Scenario 4 is an exception, as it assumes a new plantation). In addition, as most of the value added along the tea value

chain is created at the processing level in both countries, the picture is very different for processors. Assuming a small processing plant (with an annual output of 12.5 tonnes) processing green leaf from an own estate of 10 ha and a similar share (25 percent) and price (about USD 15/kg) of premium tea output in both countries, we estimate that gross margins of up to USD 120 000 in Georgia and USD 180 000 in Azerbaijan can be achieved for the processing unit. In this scenario, the estimated FIRR over a period of 20 years is, respectively, 55 percent in Georgia and 20 percent in Azerbaijan.

While our profitability estimates over a period of 20 years (assuming 10% discount rate) is, respectively for different scenarios are only indicative – as profitability is ultimately farm-specific and depends on a number of variables – they clearly suggest that there is significant potential for improving tea gross margins through changes in production practices, with lower reliance on manual labour and improvements in quality. In addition, the situation with major tea origins needs to be taken into consideration. Nowadays, tea farmers in Azerbaijan and Georgia receive higher prices for the green leaf than their peers in India and Vietnam (Table 2).

Table 2
Average green tea leaf farm-gate price

Origin	Price USD / kg
Georgia	0.30 ⁷
Azerbaijan	0.64 ⁸
Sri Lanka	0.57
India	0.10
Vietnam	0.09

SOURCE: Authors, 2021

⁷ Average price for 20% of output at GEL 3 (~USD 1.1) and 80% at GEL 0.35 (~USD 0.13) depending on quality.

⁸ Average price for 20% of output at AZN 1.4 (USD 0.82) and 80% at AZN 1 (USD 0.59) depending on quality.

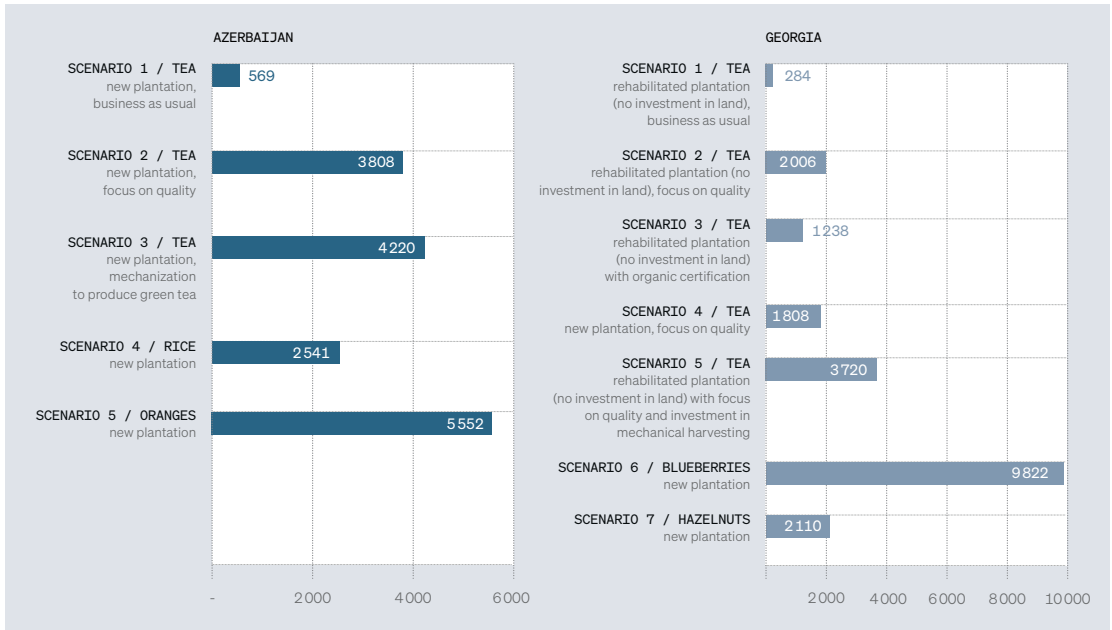


Figure 3
Gross margins for tea and alternative crops in Azerbaijan and Georgia (in USD/ha)

SOURCE: Authors, 2021

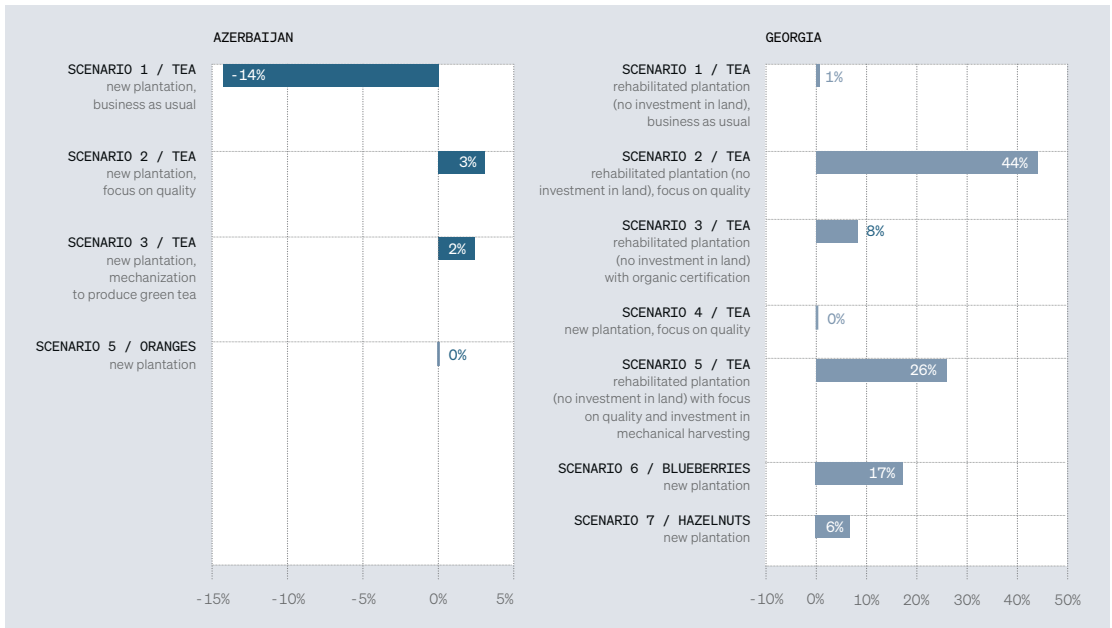


Figure 4
FIRR for tea and alternative crops in Azerbaijan and Georgia

SOURCE: Authors, 2021

A discussion of options for reducing labour costs through the introduction of mechanical harvesting (when relevant and in parallel to improving leaf output quality) is also key to improving cost competitiveness compared to main global tea producers. This might also require a change in the tea manufacture style, from black to green (see Box 1).

Our estimates show that current production costs for manufactured tea (i.e. after processing) in Georgia and Azerbaijan are higher than in Sri Lanka, India or Vietnam, which are able to produce either higher-quality teas at a similar cost, or similar quality tea at a much lower cost. High-quality black tea production is very labour intensive and, since Georgia and Azerbaijan are considered to be upper-middle income economies, they are in a difficult position when competing with major tea producers from lower-middle income countries where labour costs are lower (USD 6-7/day in Georgia and Azerbaijan compared to about USD 2/day in competing producing countries).

Concrete recommendations on improving the overall efficiency and competitiveness of the Georgian and Azerbaijani tea sectors are provided at the end of the publication. Next, a more detailed financial analysis of tea production with concrete improvement options under different tea production scenarios will be provided in two detailed studies of the two countries' tea sectors separately.

1

WHY IS MECHANIZED HARVESTING NOT AN OPTION FOR HIGH-QUALITY BLACK TEA PRODUCTION?

To make good quality black tea it is important that tea leaves are harvested and delivered complete and whole to the factory for processing. Why is this important? In the black tea production process, the enzymes are deactivated at the end of the process, after about 18 hours following harvesting. Therefore, if farmers or processors cut or bruise the leaf at the beginning of the process, the oxidation will start earlier as opposed to after the rolling process under normal production. An early oxidation results in uneven, softer, less bright and less flavourful cups of tea.

During green tea processing the deactivation step takes place immediately upon entering the factory. As a result, using harvesting techniques that cut the leaf is not nearly as damaging to the eventual quality in the finished product (as long as time to factory is not too long).

For these reasons, mechanical harvesting has traditionally been restricted to green tea manufacturing origins (Japan, China) and is used in countries where black tea has resulted in poor liquoring teas (Georgia, Turkey, Argentina).

As labour becomes increasingly costly in all origins, there has been an acceleration in the research to produce better, more selective tea harvesters. These are now used more and more for the traditional black tea origins, nonetheless this still does not make good quality orthodox (leaf) manufacture possible. Another important point is that mechanization will continue in the realm of the large-scale growers. With one hectare or less, most tasks will be manual and will require manpower or some type of alternative approach for sharing or leasing machinery.

It is accepted that the cost of tea produced from the hand plucked leaves is going to be high and will require a strong marketing and communication campaign to reach consumers who are willing to pay a premium.

QUALITY AND INTERNATIONAL COMPETITIVENESS

As part of the analysis, the organoleptic qualities of several Azerbaijani and Georgian teas (including major domestic manufacturers) were evaluated against teas from key import origins with a comparable quality and price. Results shown in Figure 5 reveal that Azerbaijani and Georgian teas perform quite well with intrinsic characteristics such as sparkle, as compared to the two top import origins (Sri Lanka and India). However, the latter have better developed characteristics such as tea colour, body and impact, while Vietnam is the closest comparative tea. The highly rated 'sparkle' characteristic of both origins reveals that both Azerbaijan and Georgia have a natural predisposition for producing teas of outstanding quality and with unique organoleptic characteristics due to their unusual northerly latitude and varied terroir. However, some changes will be required in production methods (especially in terms of plucking and post-harvest handling) in order for these teas to reveal their full potential.

The evaluation methodology used is a sensory enumerated evaluation of those characteristics, which have through various CPG (Consumer Packaged Goods) studies been shown to represent the most important attributes to the consumer. These are:

All of these characteristics depend on the processing of tea leaves and the storage conditions of finished tea. They are good indicators for optimizing processing.

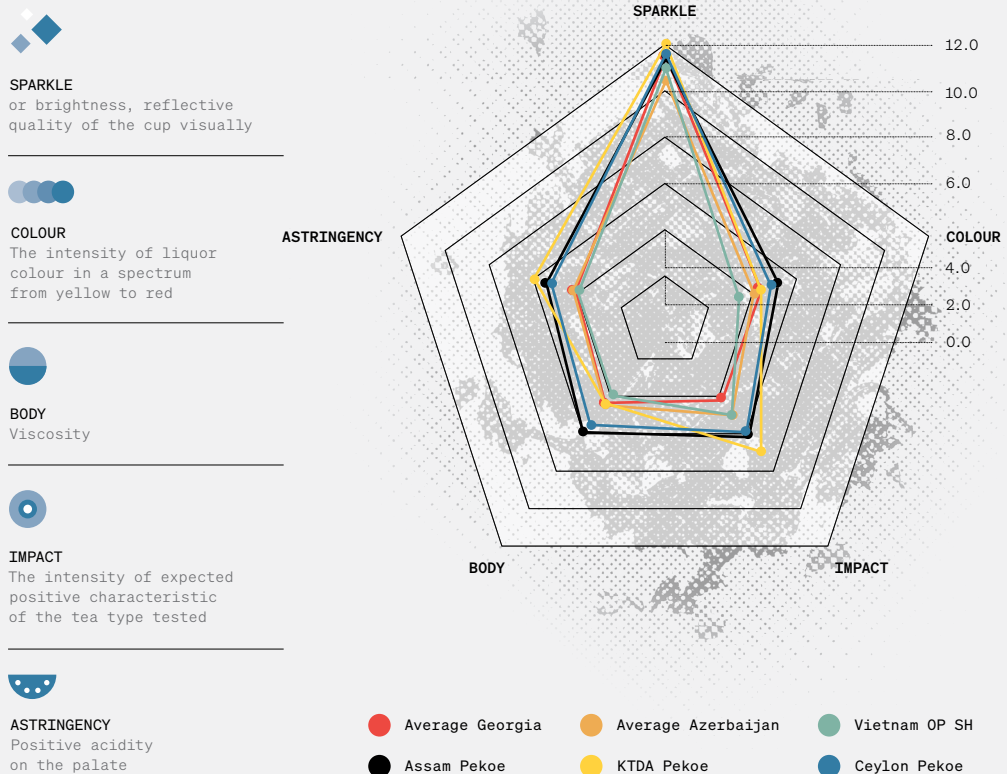


Figure 5
Sensory analysis of Azerbaijani and Georgian tea vs tea of other origins
SOURCE: Authors, 2021

Figure 6 summarizes our analysis, providing a comparison between Azerbaijani and Georgian teas and teas of import origin in terms of their estimated market value based on quality alone.

As discussed, made tea production costs in the two countries are higher than in main tea producing origins, which in most cases are capable of exporting tea at a lower cost than Georgia and Azerbaijan. This will require further reflection on the part of tea producers and policymakers in the two countries being studied, in particular on (i) the costs of production and (ii) support to tea quality and its marketing appeal to consumers.

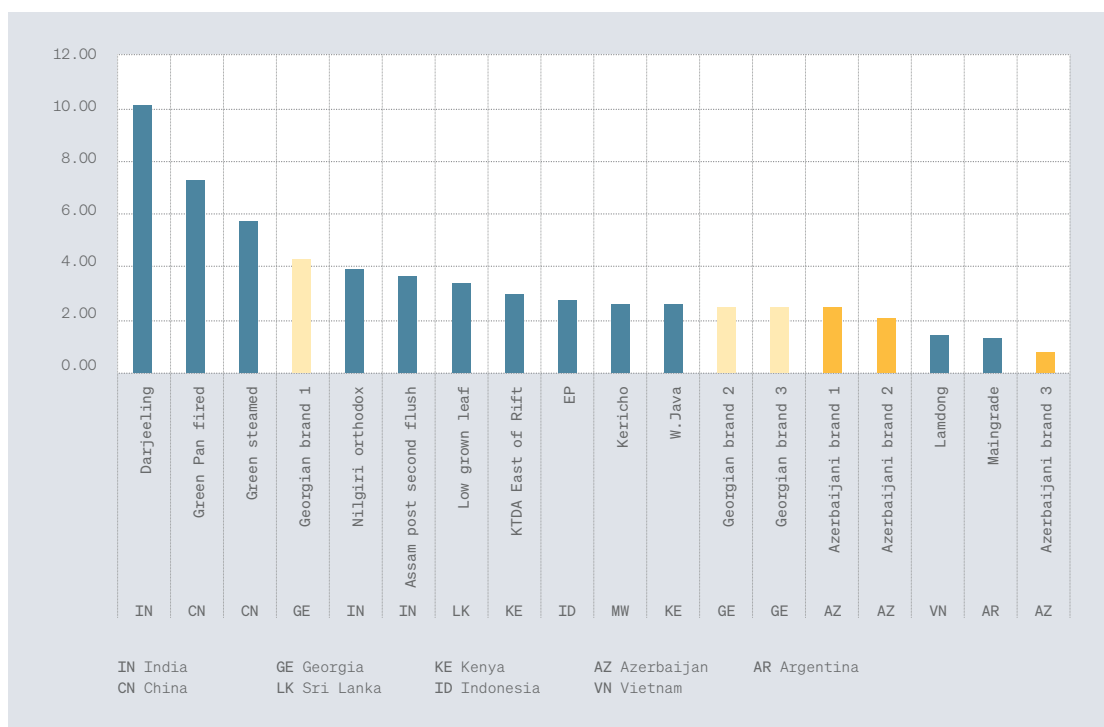


Figure 6
Estimated market value of Georgian and other teas (in USD/kg)

SOURCE: Authors, 2021

ENVIRONMENTAL SUSTAINABILITY

Tea production in Azerbaijan and Georgia is exposed and vulnerable to climate change, albeit not to the same extent as in other key tea production areas (i.e. Kenya, Sri Lanka, India and China).

In Azerbaijan, recorded and projected changes may result in immediate adverse impacts on the potential expansion of the areas suitable for tea production, as irrigation is now a precondition for production, regardless of altitude. In Georgia, the registered increase in temperature variation (MIN-MAX) and changes in precipitation patterns are causing a shift in agro-climatic zones (Figure 7). Our (conservative) estimates show that it is likely that, within 50 years, certain tea growing areas (especially those further inland) may be affected and tea cultivation there would not be possible without irrigation.

The agro-climatic zones shifting was evaluated, according to changes of the following agro-climatic parameters: total of active temperatures, precipitation in the vegetation period and average absolute minimal temperature. These are the parameters used for agro-climatic zoning of Georgia for the first time in 70s [18].

- Not suitable
- Only if irrigated
- Favorable

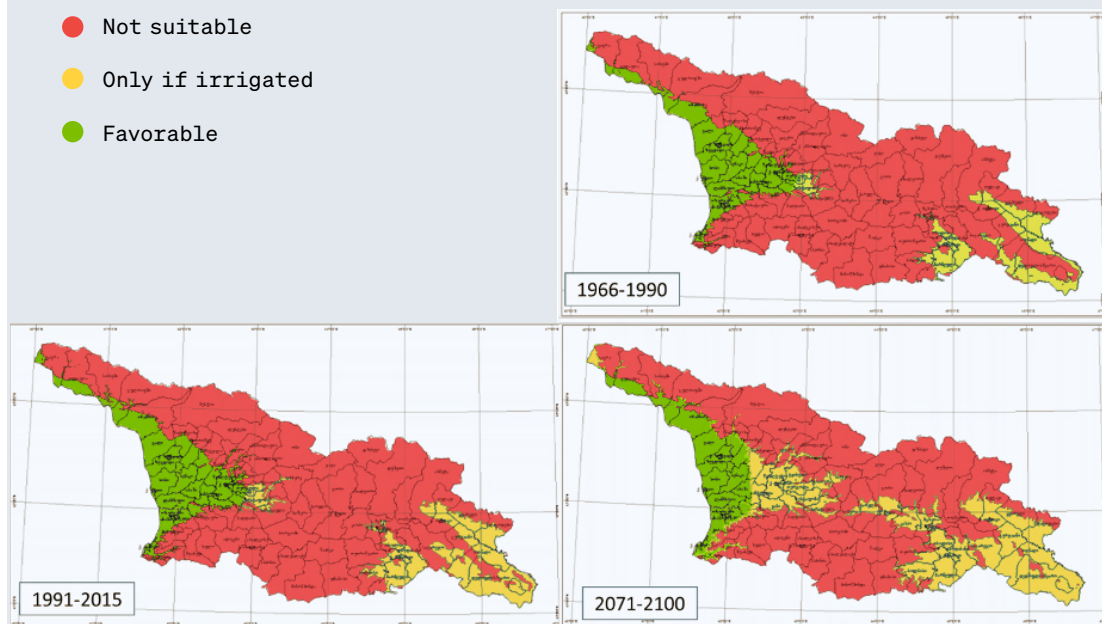


Figure 7
Changes in tea agro climatic zoning in Georgia, 1966-90, 1991-2015 and 2071-2100

SOURCE: Adapted by the authors from LEPL, 2017

In addition, in both countries wider tea cultivation coupled with changing precipitation patterns and rising temperatures may lead to the introduction of new pests and diseases that affect tea (as has already occurred with the Brown Marmorated Stink Bug, *Halymorpha halys*, affecting hazelnut production in Georgia). The vulnerability of the current production as well as of future expansion is something investors should carefully consider. Although interviews during field missions suggest that production is not currently facing pest and diseases problems, tea producers and plant protection services need to be equipped to cope with such risks in case of pest outbreaks. Tea expansion in the two countries will require parallel investments in research and development to identify and ‘tailor’ the best varieties as well as in water management initiatives to prepare for possible adverse impacts. Furthermore, investments and research are needed in order to ensure that the irrigation required for tea cultivation has no additional adverse impacts on water resources.

The impacts of current tea cultivation in Azerbaijan and Georgia appear to be moderate for existing farms and moderate to high in the case of new plantations. Nevertheless, assuming there is no change in land use, the cultivation of tea is an effective way to protect mountainous soils from erosion and instability.

Nevertheless, the overall impact of tea processing should be considered moderate to high due to the obsolete technologies and energy sources currently in use. Therefore, tea expansion in Azerbaijan would be feasible assuming that: (i) irrigation is available at the same cost as for other crops; and (ii) the appropriate environmental safeguards are in place – from cultivation to processing – to limit, mitigate and neutralize emissions and other adverse environmental impacts. This point is of particular importance, as the expansion of the sector may cause potential conflicts with the current network of protected areas and national parks.

In both Azerbaijan and Georgia options to produce low-carbon or even carbon-neutral tea should be studied separately, taking into consideration: (i) possible mitigation measures to sequester carbon dioxide from the atmosphere and reduce GHG emissions at each stage of the value chain; and (ii) related certification costs and consumers’ willingness to pay for carbon-neutral tea.

SOCIAL INCLUSION AND LABOUR ISSUES

Our approximate estimates show that productive tea plantations in Azerbaijan and Georgia require about 100 and 125 person-days of manual labour per hectare per year, respectively. Accordingly, this is equivalent to about 110 000 workdays in Azerbaijan and about 237 500 workdays in Georgia during the entire primary tea production, per the current productive area. If government targets for the expansion of the tea area in both countries are reached, these numbers would increase to 300 000 workdays in Azerbaijan and 1 million workdays in Georgia, thus highlighting the significance of the tea sector for employment. However, this would also raise questions about the availability of agricultural labour throughout the entire season. In fact, agricultural producers in a number of areas in Georgia have already reported labour shortages as a result of the seasonal migration of a large number of workers to Turkey, where remunerations are higher.

The sheer size of the workforce required by primary tea production also stresses the need for potential investors in the tea sector who should pay particular attention to issues of social responsibility. While Georgia and Azerbaijan have aligned their labour legislation with international standards (having ratified all eight “fundamental” ILO conventions⁹), several factors indicate that workers in the tea sector could be a vulnerable group in both countries. An overwhelming majority of the workers are rural women (over 90 percent in some instances) who are employed seasonally or for limited periods of time and presumably under informal labour arrangements. Actual and potential stakeholders in the tea sector should therefore ensure that labourers are offered adequate legal protection, and that basic labour rights regarding their work environment, working hours and minimum pay are respected. While there have been no official reports on child or forced labour in the tea sector, the possibility of minors participating in such work cannot be ruled out.

⁹ 1. Freedom of Association and Protection of the Right to Organise Convention, 1948 (No. 87), 2. Right to Organise and Collective Bargaining Convention, 1949 (No. 98), 3. Forced Labour Convention, 1930 (No. 29) (and its 2014 Protocol), n4. Abolition of Forced Labour Convention, 1957 (No. 105), 5. Minimum Age Convention, 1973 (No. 138), 6. Worst Forms of Child Labour Convention, 1999 (No. 182), 7. Equal Remuneration Convention, 1951 (No. 100), 8. Discrimination (Employment and Occupation) Convention, 1958 (No. 111).

Consumption



Consumption patterns represent a key difference between Georgia and Azerbaijan that may require two different approaches for the development of their tea sectors, in terms of prioritizing improved market access to and diversification of export markets (Georgia) over stronger producer reliance on the domestic market and import substitution (Azerbaijan). In fact, Azerbaijan has a strong tea drinking culture similar to that of neighbouring Turkey and Iran.

Growing tea consumption in Azerbaijan is a promising trend for the sector, with per capita annual consumption increasing from 1.6 kg in 2008 to 2.1 kg in 2018 (+31 percent). This currently places Azerbaijan amongst the top tea drinking nations together with the UK, Turkey or Morocco, where annual per capita consumption ranges between 1.5 and 4 kg (Figure 8).

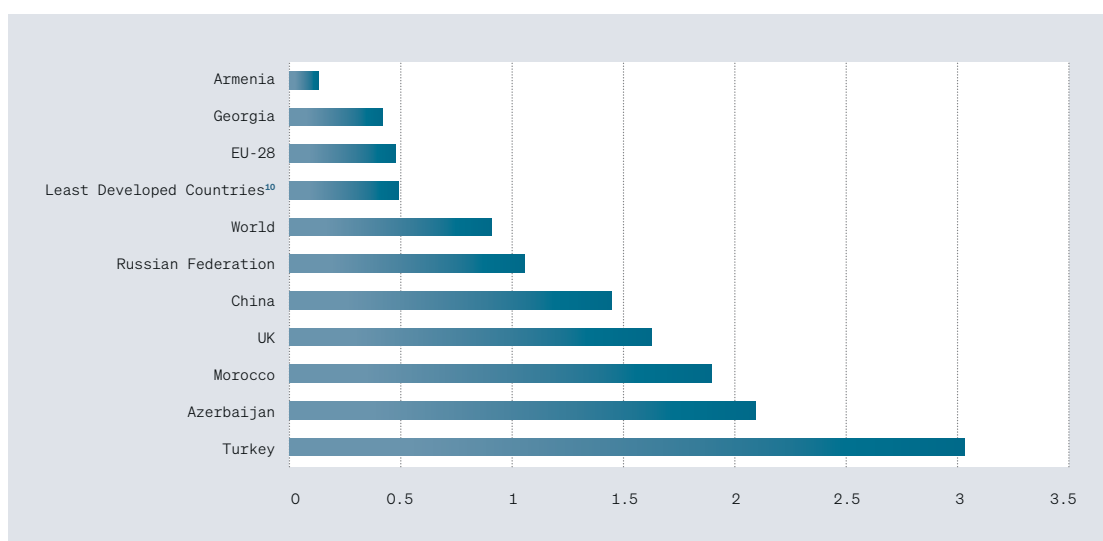


Figure 8
Average yearly per capita tea consumption, 2018 (kg)

SOURCE: Authors calculations using FAOSTAT (as at 20 May 2021), for all countries except Azerbaijan where per capita consumption was estimated based on total consumption data of The State Statistical Committee of the Republic of Azerbaijan, 2021

¹⁰ Least developed countries as per the UNCTAD definition.

Increasing consumption per capita and demographic growth mean that throughout 2008 and 2018, total tea consumption in Azerbaijan increased from 13 to 21 thousand tonnes (+58 percent). With domestic green leaf production under 1000 tonnes (equivalent to less than 250 tonnes of made tea), Azerbaijan has relied on imported tea for 99 percent of its domestic tea supply as of 2018. Therefore, protecting the origin of Azerbaijani tea is important, as domestic consumers are often led to believe that the tea characteristics they have become familiar with belong to Azerbaijani tea, while in fact they are consuming mostly imported tea. The enforcement of the rules of origin or geographic indications, coupled with parallel efforts to educate consumers about the unique characteristics of tea grown in Azerbaijan, are a possible basis for the creation of a more discerning domestic tea market. On the other hand, while there is a clear margin for import substitution, parallel efforts will also be needed to bring Azerbaijani made tea closer to the quality of imported Sri Lankan or Indian teas, to which local consumers have become accustomed, while preserving its unique organoleptic qualities.

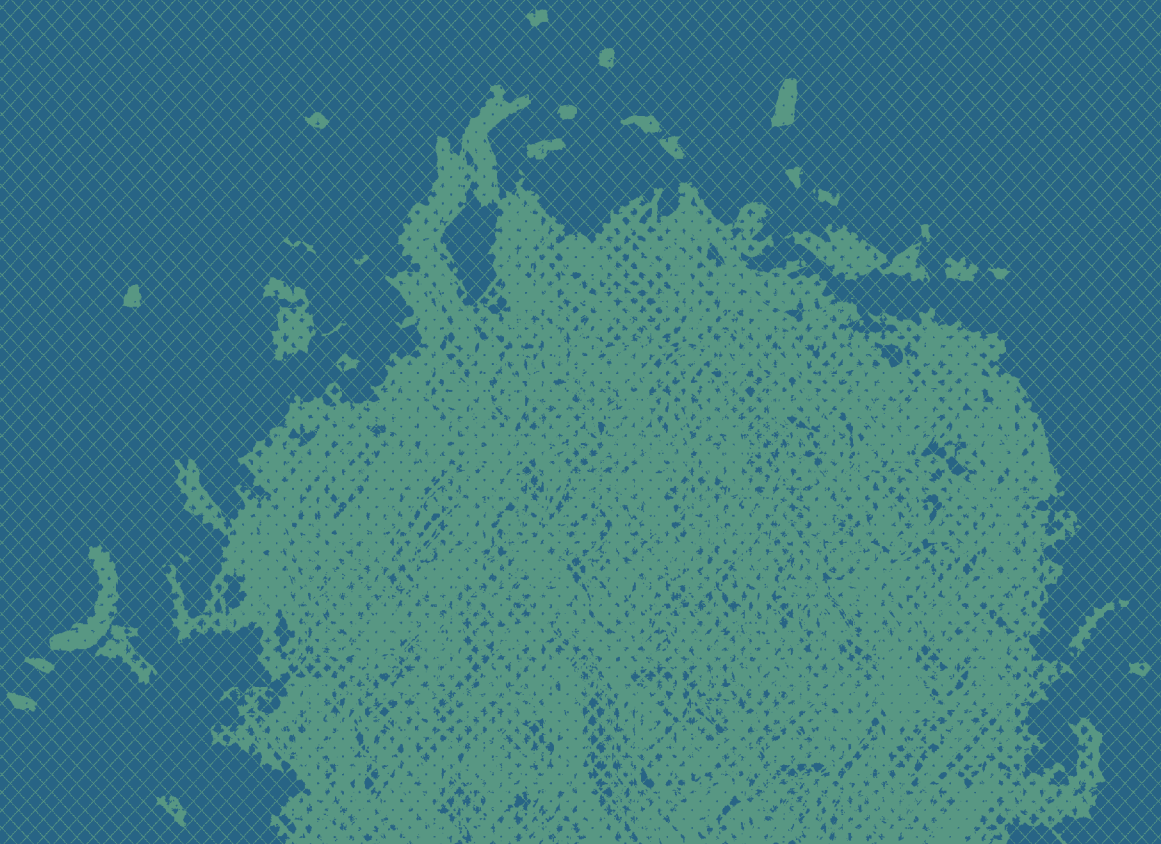
Consumption patterns are drastically different in Georgia, where per capita consumption is only around 400 grammes per year (five times lower than in Azerbaijan), of which just about 100 grammes are consumed within households and the rest is consumed in the hotels, restaurants and catering sector (National Statistics Office of Georgia, 2021). While rising incomes in Georgia might open up opportunities for high-end niche products, such as specialty or health and wellness teas, it is clear that the development of the country's tea sector will have to be strongly export-oriented, as domestic consumption patterns are unlikely to shift significantly.

In this sense, a focus on improving tea quality while maintaining the unique characteristics of Georgian tea and protecting its identity are also key to reaching lucrative export markets, and also enhancing the consumer appeal of the 'made in Georgia' tea brand internationally (similar to what has been done with Georgian wine).

As Georgia is a growing tourist destination, the HoReCa sector, which is the 'backbone' of domestic consumption, might also have an important role to play in strengthening the positive image of Georgian tea by focusing on the promotion of high quality domestically grown teas.



Trade



CURRENT TRADE FLOWS

Although both Georgia and Azerbaijan were the main tea suppliers to the former Soviet market, they have now become net tea importers. The difference between imports and exports is much more pronounced in Azerbaijan – there is a large local consumption of imported tea of about 14 000 tonnes valued at USD 55 million in 2019 (UN Comtrade), mostly from Sri Lanka (percent in volume terms), as opposed to 1500 tonnes exported tea valued at USD 9.5 million. On the other hand, Georgia imported about 2500 tonnes (USD 10 million) in 2019, mostly from Sri Lanka and Iran (via Turkey), and also from Azerbaijan, while it exported 2000 tonnes for a value of USD 4.4 million. The key difference between the two countries is that a large share of Georgian exports, constituted of low-priced “brick” tea, are sent to Mongolia and Kazakhstan, thus decreasing the total unit value of its tea exports as compared to Azerbaijan.

For both producers, the main destinations of tea exports are former Soviet countries. In particular, Azerbaijani exports to Russia, Georgia, Ukraine and Kazakhstan account for more than 95 percent of its total tea exports. On the other hand, Sri-Lanka, Russia (re-export of packaged tea) and India account for 96 percent of Azerbaijan tea imports. Sri Lanka is by far the most significant origin of imports with a share of 88 percent.

Almost 84 percent of the tea exported from Azerbaijan is black tea packaged in tea bags and placed in boxes weighing up to 3 kg (in most cases ready for final consumption). In contrast, about 89 percent of imported black tea to Azerbaijan is in bulk. It is further blended, packaged and branded in Azerbaijan and then either sold domestically or re-exported, which often raises uncertainty about the labelling and application of the rules of origin for Azerbaijani tea.

On average, export prices in 2018 were about two times higher than import prices: 6.86 USD/kg for exports and 3.84 USD/kg for imports in 2018, indicating that the exported tea is mainly directed to a high-end market. This suggests that once packed and marketed as ‘made in Azerbaijan’, tea imported from Azerbaijan has a certain appeal to consumers and is able to fetch acceptable prices higher than for packaged tea from Sri Lanka or Kenya, albeit not necessarily of superior quality.

Contrary to the methods used in neighbouring Azerbaijan, green tea in Georgia, mainly a ‘brick’ type with lower value, accounts for about two-thirds of total exported volumes and is exported to Central Asia (Mongolia, Kazakhstan and Turkmenistan). Black tea is exported to neighbouring Turkey (in bulk) and Azerbaijan (in packs of less than 3 kg). Packed black tea is the category where most of the export value has been created, representing only 12 percent of tea exports in volume terms but accounting for almost half of their USD value. Georgia is similar to Azerbaijan whereby its black tea of blended origins, sometimes containing minimal amounts of Georgian-grown tea, is often exported under the ‘made in Georgia’ brand. On the other hand, tea imports in Georgia have averaged around 2 500 tonnes per year since 2017, half of them being composed of black tea in bulk. In turn, these imports were mostly composed of low-value (USD 0.2/kg) imports from Turkey (50 percent), which are likely to be trans-shipments from Iran, and higher-value imports from Sri Lanka and India (around USD 2.3/kg). The other half are imports of packaged tea, mainly

from Azerbaijan and Russia, with an average import value of USD 6/kg and above; green tea imports were marginal (less than 3 percent of total volumes)¹¹. Considering that domestic tea consumption is estimated at around 1500 tonnes/year, a significant share of bulk tea imports presumably caters to the Georgian tea processing industry that re-exports them under its various brands.

Overall, limited domestic consumption and external trade patterns suggest that, subject to achieving adequate levels of efficiency and product quality, a focus on export markets could be a cornerstone in the context of the revival of the Georgian tea sector, as this represents a promising opportunity for further added value. In addition to the traditional production of black tea, the production of quality green teas and organic tea may be worthy alternatives to explore. The options for the protection of tea origins and traceability of domestically produced tea from field to cup might be a way to ensure trust in the ‘tea grown and made in Georgia’ brand, both domestically and internationally.

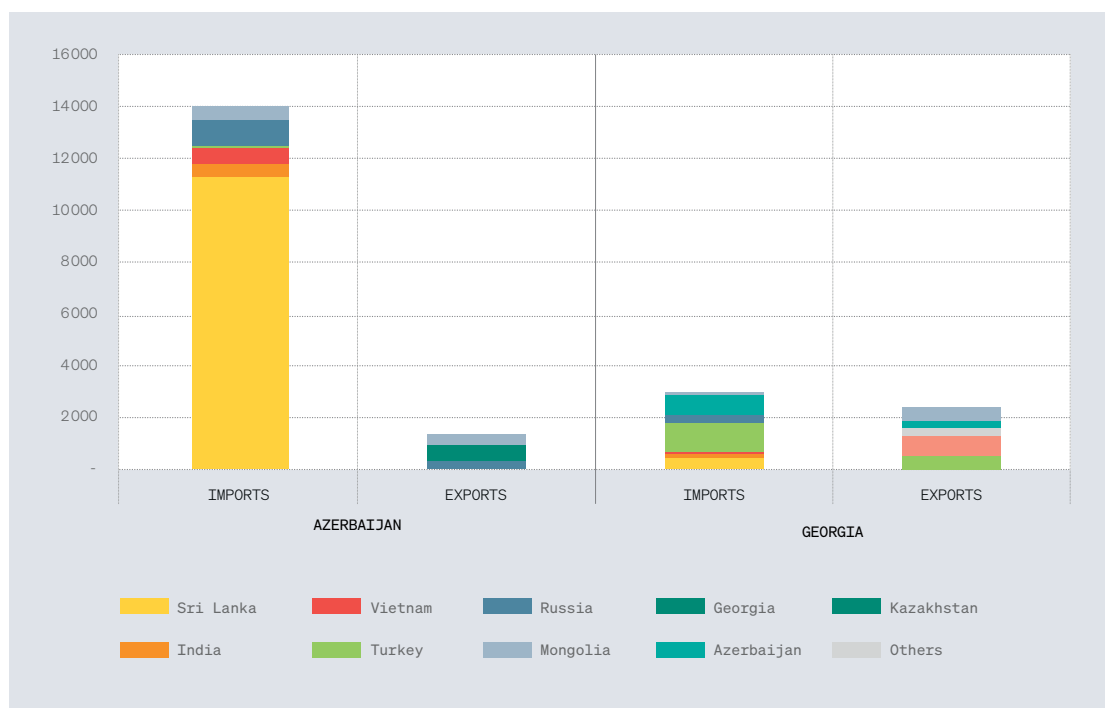


Figure 9
Tea trade in Georgia and Azerbaijan (in tonnes), 2020

SOURCE: UN Comtrade, (2021) for Azerbaijan, Trade Data Monitor, (2021) Tea Trade for Georgia

¹¹ Data on volumes and prices refers to 2019 (Trade Data Monitor, 2021).

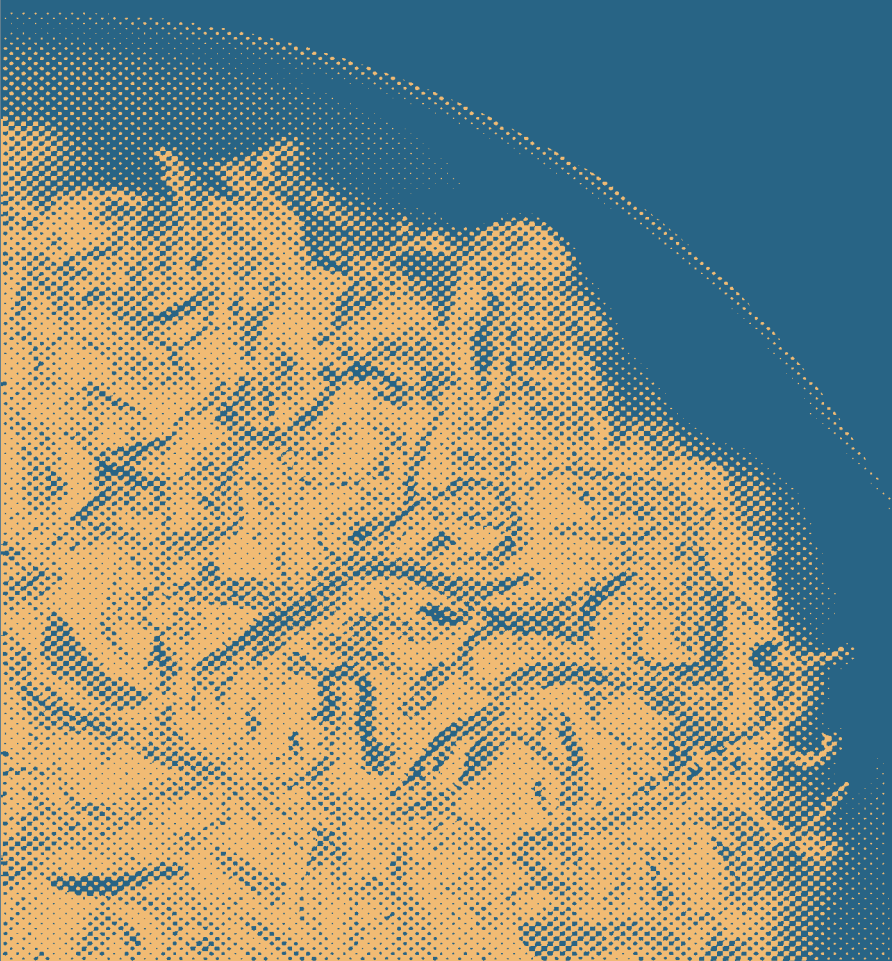
LOSS OF TEA IDENTITY

Tea produced and packaged in both Azerbaijan and Georgia by some domestic producers is usually a blend of domestic and imported tea (mostly from Iran in Georgia and from Sri Lanka in Azerbaijan), despite the fact that such information is not included in the labelling. The mixing of tea of various origins and its packaging as a 'national' product is a well-known practice within the industry, even in cases where the share of locally-produced tea is under 10 percent of the final product. The effect of such practices on the evolution of consumer preferences both domestically and in key export markets could be significant, as consumers are led to believe that the characteristics of the tea they are accustomed to drinking belong to the local tea, while in fact they are consuming mostly imported (or re-exported) tea.

A possible way forward would be the introduction and enforcement of rules as regards the origin or geographic indications, or at least clear labelling guidelines allowing consumers to differentiate between locally grown and locally processed but imported tea. This should be coupled with parallel efforts to educate consumers about the unique characteristics of tea grown in Azerbaijan and Georgia. Furthermore, providing more information could feasibly be a basis for the creation of more discerning tea markets where Georgian and Azerbaijani teas need to popularize and protect their unique identity.



Recommendations



Reassess support to the tea sector in view of its potential, alternative crops and greening. Under the current support system, tea appears to be one of the few crops that receives substantial public support in Azerbaijan and Georgia. For the local tea varieties in both countries, a long dormancy period and inherent tea processing skillsets means that they could re-emerge as quality origins. However, agro-climatic conditions in coastal areas of both countries allow for the production of a number of other crops, which have a stronger comparative advantage internationally and are financially more attractive to local farmers. Our analysis suggests a limited financial attractiveness of primary tea production for farmers in comparison with other such alternatives. In addition, considering the international market situation whereby only a limited increase in demand for tea is expected in the next decade and real prices are expected to decrease, we suggest that equal priority be given to all crops based on their value-addition and employment generation potential. While we recommend that such a discussion with key tea sector stakeholders at the national and local levels be led by the relevant ministries in both countries, the following recommendations should be considered as options for improving the efficiency and international competitiveness of the tea sectors of Azerbaijan and Georgia, in view of the expected global consumption trends.

Improve production practices of black tea. As per field visits, the following steps are seen as critical to improving the quality of current black tea manufacture in both Azerbaijan and Georgia:

- (i) maximize the quality potential of the first harvest (first flush) in May;
- (ii) ensure that harvesting takes place in line with standard international practices, as the reported harvesting of five to six leaves and a bud cannot produce any quality tea capable of competing on international markets;
- (iii) consider options for reducing the cost of labour for tea production, which would include a careful analysis of the costs and benefits of partially mechanized harvesting for different types of tea. Producers in many countries successfully produce quality green tea using mechanical harvesting;
- (iv) ensure an adequate post-harvest handling of tea leaves by reducing the time between tea harvest and processing;
- (v) modernize processing methods and equipment, when necessary.

Consider the production of specialty teas (especially green tea). Although there is a thriving domestic market for black tea in Azerbaijan, the low yields and high labour costs (for hand plucking) make the primary input to production (green leaf) prohibitive in both Azerbaijan and Georgia, unless the focus is on the manufacturing of specialty teas. In addition, the potential loss of rural labour in the future requires a strategy for working with mechanically harvested leaf that points towards green tea manufacturing.

In particular, the Georgian tea varieties seem to be suited to making very smooth liquoring bright green teas which, coupled with agro-chemical free notations, offers a significant opportunity both within Western markets (North America and Europe) and traditional Chinese markets (including China's domestic market). While this is a growth category,

significant support from the government to make this happen will be required, more specifically with a focus on an extension to the rehabilitation programme, which would dictate the type of tea and also support the building of processing units within specified guidelines to ensure a national identity of type.

Support improved integration of the industry. There is evidence that government objectives to increase the productive tea area are manageable goals in both Azerbaijan and Georgia, albeit without necessarily taking into account the financial capabilities of smallholders. In order to support smallholder inclusion through a more equitable distribution of value added, further consideration should be given to state support with:

- promoting farmer-processor cooperation;
- tea farmers' participation in the revenues from tea markets linked to specific geographical location;
- organic and carbon emission certification schemes.

In particular, this could be centered around a field and factory cooperative framework that would see ownership and profit sharing from:

- scaling tea leaf production to processing capacities;
- central control of field practices and leaf quality;
- aggregating smallholder purchasing power for farm inputs including technical assistance;
- the ability for farmers to access credit, as part of a vertically integrated, higher-margin enterprise;
- considering limits on the state support provided to large vertically integrated companies in order to ensure wider socio-economic inclusion.

Without intervention, it is highly likely that the large production companies will eventually move further ahead with production.

Strengthen standards, quality coordination and sample analysis. Protecting the reputation and ensuring the success of Azerbaijani and Georgian teas will require a continuous effort to guarantee their quality and safety. The collection of regional samples for testing of chemical residues, pyrrolizidine alkaloids and pathogenic microbes is a strongly recommended first step to monitor key tea quality parameters, and to ensure the identification of adequate support policies and well-targeted government actions. Furthermore, the industry in both countries may also benefit from an increased understanding between farmers, processors and consumers on the main quality attributes and product grading. As the industry evolves, governments may consider developing national quality standards to protect the interests of farmers, producers and consumers by differentiating harvest timing and grading based on quality and sensory parameters.

Consider introducing rules of origin and geographical indications. In order for Georgian and Azerbaijani teas to receive the recognition they deserve – both domestically and in export markets – it is imperative that rules be enforced to provide the consumer with information about the actual origin of the tea they are consuming. At present, a very significant share of tea marketed as Azerbaijani or Georgian tea is, in fact, mostly constituted by

imports. While both origins undoubtedly have some unique characteristics, the fact that the teas originate from imports is preventing consumers from developing their knowledge of the local terroir and specific organoleptic qualities of local teas. This is a critical requirement for Azerbaijani and Georgian teas, in order to succeed in distinguishing themselves as a national product in the home market. One of the key steps would be to include the introduction of a legislation that differentiates value-added tea products made from domestic grown tea from other teas packaged in Georgia and Azerbaijan. In addition, steps should be taken to follow EU regulations on the control of pesticide residues, heavy metals and pathogenic organisms throughout the entire value chain: imports, domestic production and exports.

Anticipate food safety risks. Although compliance with stringent Maximum Residue Levels (MRLs) for agrochemicals in tea or the use of prohibited chemicals does not present an issue for tea producers in Georgia and Azerbaijan, due to the relatively low pest and disease pressure, food safety issues are on the agenda of the regulators in key tea markets (especially in the European Union). Considering that these two countries are actively importing, blending, packaging and re-exporting tea, strict food safety controls would protect the reputation of the domestic tea industry and further increase the attractiveness and the value in export markets in the long-term. For example, options for Global Food Safety Initiative (GFSI) certification and approval could be considered. This is not required for the internal market but will help for any export market considerations, including Russia where GFSI is taking hold.

Consider organic certification. If certification schemes and testing vouch for the fact that Azerbaijani and Georgian teas are chemical-free, then this would give a substantial marketing advantage few origins can compete with; therefore, organic certification should be considered. Consumer demand for organic certified products is on the rise, especially within the specialty and green tea categories. For existing plantations (as is the case in Georgia) certification should be relatively easy to achieve, particularly if rehabilitated tea plantations have not been managed for many years. This being said, there is a transition period for all crops before full certification (usually three years) however product value is enhanced because of this. Nonetheless, it is suggested that the demand and potential markets be confirmed prior to converting. Organic manufacture should not alter the cost/ha to any extent and yields should remain about the same.

Support research. Considering the challenges posed by climate change, supporting research institutions would be critical, especially regarding (i) breeding new plant varieties adapted to local conditions and potential future risks (especially related to the potential need for irrigated tea production in Georgia); (ii) plant protection from pests and diseases; and (iii) knowledge transfer to producers. Adequate public support in these areas would assure long-term industry sustainability.



SWOT Analysis



Table 3

SWOT analysis of the Azerbaijani and Georgian tea sectors

STRENGTHS	WEAKNESSES
<ul style="list-style-type: none"> • long historical association with tea; • slow growth due to dormancy creates high polyphenol/health quota and confers Georgian and Azerbaijani teas unique organoleptic qualities; • good internal tea production skillset; • current governmental support for tea; • large processing capacity; • state support and technical assistance available to support industry expansion; • proximity to “traditional” CIS markets and high-value markets (EU) for export; • Azerbaijan: Strong internal demand for tea. 	<ul style="list-style-type: none"> • highly inequitable supply chain (margins and pricing in the hands of the black tea processors) and packers; • rules of origin not upheld so consumers cannot differentiate local tea from imports (in fact, consumers have been conditioned to import quality); • current leaf style is not conducive to export-quality retail packs; • need to improve production practices, especially at the harvesting at post-harvest stages to improve quality; • high labour costs.
OPPORTUNITIES	RISKS
<ul style="list-style-type: none"> • opportunity for organic production as pesticides and chemical fertilizers are generally not used; • development of GIs and voluntary quality/carbon labels; • room to increase productivity of existing fields, match factory capacities to green leaf catchment, refine manufacturing process to mimic and therefore replace foreign teas in domestic black tea packs; • unique clonal material and northerly latitude creates unique teas. Opportunity to make world-class quality leaf teas if market strategy supports; • in Georgia, natural stock creates smooth profiles perfect for green tea if market strategy supports (conducive to lowering labour costs through the introduction of mechanized harvesting); • in Azerbaijan: significant and growing domestic demand for tea. 	<ul style="list-style-type: none"> • loss of skillset with ageing population; • land use competition by more profitable crops; • return on Investment and financial profitability, even with government support, is of limited attractiveness to farmers in comparison with other crops; • tea will mainly attract current processors limiting the economic impact on rural communities; • climate change and inability to produce tea at certain altitudes without irrigation (in Georgia); risk of the introduction of new pests due to climate change.

SOURCE: Authors, 2021

References

- FAOSTAT. 2021.** [online]. [As at 21 May 2021]. <http://www.fao.org/faostat/en/>
- FAO. 2018.** *Current Market Situation and Medium-Term Outlook for tea to 2027, Twenty-third Session of the Intergovernmental Group (IGG) on Tea*, 17-20 May 2018, Hangzhou, China [online]. Rome. [Cited 12 May 2021]. <http://www.fao.org/3/BU642en/bu642en.pdf>
- ILO. 2021.** *International Labour Organization [online]*. [Cited 12 May 2021]. <https://www.ilo.org/>
- LEPL. 2017.** *Climate Change National Adaptation Plan for Georgia's Agriculture Sector* [online]. Tbilisi, Ministry of Environment and Natural Resources Protection and the Ministry of Agriculture. [Cited 12 May 2021]. <http://eiec.gov.ge/%E1%83%97%E1%83%94%E1%83%9B%E1%83%94%E1%83%91%E1%83%98/%E1%83%99%E1%83%9A%E1%83%98%E1%83%9B%E1%83%90%E1%83%A2%E1%83%98%E1%83%A1-%E1%83%AA%E1%83%95%E1%83%9A%E1%83%98%E1%83%9A%E1%83%94%E1%83%91%E1%83%90/Project/Ended-Projects/Nap-English.aspx>
- National Statistics Office of Georgia. 2021.** [online]. [Cited 12 May 2021]. <https://www.geostat.ge/>
- The State Statistical Committee of the Republic of Azerbaijan. 2021.** [online]. [Cited 12 May 2021]. <https://www.stat.gov.az/>
- Trade Data Monitor, 2021.** [Cited 12 May 2021]. <https://www.tdmlogin.com/tdm/index.html>
- UN Comtrade. 2021.** [online]. [Cited 12 May 2021]. <https://comtrade.un.org/>
- UNCTAD.2021.** [Cited 12 May 2021]. Available at: <https://unctad.org/topic/least-developed-countries>

Glossary

CTC	CTC or Crush-Tear-Curl production is one of the two main methods of tea manufacture together with Orthodox Tea Manufacture (see below). All five steps of orthodox processing are performed, but much more rapidly and in a limited fashion. CTC was invented specifically for the black tea industry, in an effort to save time (a single batch of tea otherwise can take over a day to produce) and money, but produces teas of lower quality
L&B	(leaves and a bud) refers to the plucking standard defined by the number of leaves harvested, plus the bud. The common standard for quality tea (black or green) is harvesting the two most tender leaves and the bud from a given shoot (2 L&B) and quality deteriorates as more, coarser leaves are harvested.
Orthodox tea	Orthodox tea refers to loose-leaf tea that is produced using traditional (or orthodox) methods of tea production, which involve plucking, withering, rolling, oxidation /fermentation and drying. It is the dominant processing method in Azerbaijan and Georgia.
PA	Pyrrrolizidine alkaloids (secondary plant substances which may be genotoxic carcinogens)



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Tea has a long tradition of cultivation in Azerbaijan and Georgia, dating back to the 19th century. The structural changes that followed the collapse of the Soviet Union in the early 1990s led to a dramatic decline of the two countries' tea sectors. However, interest in tea production in Georgia and Azerbaijan has increased in recent years and, in an effort to revive their once thriving tea sectors, governments have adopted sector development programmes that provide for support to primary tea production.

In spite of the long tradition and accumulated know-how of tea production and processing, there is little doubt that investments in both technology and knowledge will be required for the Azerbaijani and Georgian tea sectors to grow in a successful and sustainable way. Production focused on efficiency and quality and mindful of shifts in consumer preferences on global markets, but also of potential environmental risks, will be critical in achieving this goal.