

Green tea business in Georgia: case of Guria region

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Abstract. The paper focuses on the importance of producing tea as an environmentally friendly product. Georgian tea producers have a great opportunity facilitated by the existing natural environment, geographical location, natural characteristics of local tea, and the development of tea tourism in Georgia. Recently, tea tours have become attractive in Georgia. A tea tour is one of the world's famous tourist products, closely related to the cultivation, production and consumption of tea culture. The paper describes the problems in the tea production sector: tea production in the region is decreasing, the number of working tea plantations is decreasing, and many abandoned and neglected tea plantations. The study presents ways to solve these problems by improving existing varieties, organizing nurseries and demonstration plantations, and, at the legislative level, regulating the use of herbicides and pesticides, which will increase the nutritional value of tea and give it the appearance of an eco-product. In addition, manufacturers must possess the latest technologies to obtain quality products. The paper examines the modern trends in tea-making development in Georgia and the world, settles prospects of its development in the region of Guria, and offers the possibility of providing the tourist product "Tea Road" to customers. All this will help replace imported tea with local tea and get visitors interested in the "Tea Road" activities.

1 Introduction

Georgia has a great opportunity to produce environmentally friendly tea. In particular, Guria is one of its regions and has excellent resources. The region's location and soil-climatic conditions, especially the air of the mountain and the sea, help to grow and spread the tea culture. Besides, all the beneficial properties of tea leaves are revealed after processing, which largely depends on the technology of its processing. As a result of all these, the local tea: has soft and pleasant aroma; has no need to add poisonous chemicals and pesticides to it; is naturally clean and pleasant to drink. Precisely because of this, it attracts many visitors and other customers. Tea production may play a decisive role in region's economic recovery and lay foundation for the success of agriculture and tourism.

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To achieve the above mentioned success, in the article there will be discussed tea production in the Guria region and its role in the development of agritourism.

2 Related works

Many scientific studies have been conducted on the beneficial properties of tea, environmentally friendly tea production technologies, and its role in the economy. Nowadays, the technology of making tea is mainly focused on an ecologically clean product with good taste properties [1-7], which significantly depends not only on the production of green tea [8-11], but also on its processing industry [12-15], protection from harmful organisms [16], preservation of its medicinal properties [16, 17]. Nowadays, processes of ecologically clean tea cultivation-processing are included in agritourism [18-25]. Its role in the economic development of some countries is great [26- 28].

3 Method

The paper used the qualitative research method, which is documentary, systemic, synthetic, and comparative analysis. In order to obtain the data, a survey using questionnaires was conducted. This survey method was chosen because there is no statistical data on tourism and agritourism in the Guria region. Local farmers and merchants participated in the survey; it was revealed that most of them were involved in agritourism activities. A total of 18 tea-producing (small) entrepreneur-farmers were recorded. Thirteen of them are in Ozurgeti municipality, two are in Chokhat'auri, and three are in Lanchkhuti. In the research process was used scientific works of Georgian and foreign researchers-scientists in the field of agritourism, collections of scientific-practical conferences, and data from National Statistics Office of Georgia and the Georgian National Tourism Administration. Also the data of tourism services of Ozurgeti, Chokhat'auri, and Lanchkhuti municipalities of Guria region.

4 Results

4.1. Healing properties of tea

Tea is one of the most frequently consumed beverages across the world. It is known to be originated in China and the production is confined to certain regions of Asia (India, China, Sri Lanka, Japan, Vietnam, and Indonesia), Africa (Kenya, Uganda, and Malawi), and to a small coverage of Latin America (e.g., Argentina) only. Tea is an evergreen shrub belonging to the Theaceae family, Camellia genus. Subtropical species of tea - *Thea sinensis* and tropical species - *Thea assamica* are produced in the culture. The main purpose of growing a tea plant is to obtain tender shoots from which different types of tea (black, green, yellow, red, white, etc.) are made.

As early as many centuries ago, before the chemical composition of tea was known, people discovered its medicinal and nutritional properties. Tea is one of the most common beverages in the world after a drinking water and is consumed by more than half of the world's population. It is an international drink. The popularity of tea drinks is irreplaceable due to organoleptic indicators and stimulating properties of tea.

The contribution of micro and macro elements of tea to human health is large, which supports the growth of the overall vitality of the human body. Among microelements, fluorine is significant. Mineral substances make up 5-6% of the dry matter of the tea product, of which 50% are potassium and 15.5% phosphorus compounds.

The content of essential oils in tea improves a mood, gives courage, and the ability to work; also, it activates the central nervous system.

Moderate consumption of tea helps provide instant relaxation, minimize the damage caused by free radicals in the body, boost the immune system, reduce inflammation, facilitate weight management, and lower cholesterol levels in the blood. Today, tea has become a simple food product and has become a widely used beverage. It is used in both traditional forms of tea, such as tea bags, as well as flavoured tea bags that are dissolved in water for a non-traditional experience.

4.2. History of spreading the tea in Guria region

In Guria, the first tea bush was planted in 1809 in the garden of Mamiya the Fifth Gurieli (Prince (Mtavari) of Guria 1809-1826). (Mamiya Gurieli's garden currently is one of the central gardens of the city of Ozurgeti: the garden of plane trees). The tea planted in the garden had no industrial purpose. For 15 years, Gurieli set up a wonderful garden by growing tea, oranges, and lemons. Jacob Marr, a Scottish agronomist, and horticulturist led the cultivation of the garden.

After the death of Mamiya Gurrieli, his garden was destroyed. During the Russo-Ottoman war (1854-1856), the military settled in the former Mamiya garden, in the centre of the city, and they cut down and destroyed the garden. According to the advice of J. Mari, tea bushes were transplanted in Goraberezhoul, in Mikheil Eristavi's estate, who was appreciator of tea culture. He first saw and tasted tea in China and then decided to plant it in Georgia. According to the story, it was forbidden to export tea seedlings or seeds from China at that time, but he still managed to bring them here. In 1864 M. Eristavi was the first in Georgia to process tea products in a primitive manner, and exported them to the agricultural exhibitions held in Tbilisi and St. Petersburg.

In the second half of the 19th century, the cultivation of tea bushes went beyond Guria and the practice spread to all regions of western Georgia: Abkhazia, Adjara, Imereti, and Samegrelo. The cultivation of industrial plantations began in the 30s of the last century.

In 1861, the first Georgian "Baikho tea" was produced. In 1864, the product was presented at an agricultural exhibition in St. Petersburg, and in 1885, the first export shipment was made to Europe [29].

In the 1980s, 190,000 people were employed in the Georgian tea industry, there were 70,000 hectares of tea plantations, 140 factories of primary production, 25 packaging factories, and 3 mechanical factories, as well as several industrial facilities. Six hundred thousand tons of green leaves or 133 thousand tons of tea were produced in Georgia, placing it on fifth place in tea production, after India, China, Japan, and Sri Lanka [30].

Tea was exported from Georgia to other Soviet republics and to Eastern Europe and South Africa as well. Georgian tea was sold in France, Germany, Austria, Finland, and Great Britain. In Georgia, the tea industry had the greatest social responsibility, both in terms of agricultural and industrial development, as well as in terms of employment, budget revenues, and social welfare

In 1900, out of 23 tea test plots in Georgia, the most, nine plots were located in Ozurgeti Mazra [31]. Of these, the estate of the Nak'ashidze family in Zedubani is noteworthy. In 1889, Mikheil Nak'ashidze brought tea from Chakvi and planted it on five hectares; he built a factory that sold products under the name "Tea of the Duke M. M. Nak'ashidze". By 1900, Ermile Nak'ashidze had a tea processing plant and was releasing tea under the trademark "Ermilita". "Prince Society" also produced tea in Guria. On May 21, 1900, "Iveria" wrote: "The Prince agency expects to harvest 5,000 pounds of tea from Guria plantations this year. And in the next year it hopes harvesting 20 000 pounds" (see: <https://el.ge/articles/45150>).

In the years 1913-1918, number of tea plantations in Guria was increased, but by 1918, tea production fell by 50%. In 1921, the average yield per hectare was 500 kg. In the village of Ask'ana, tea was produced by famous winemaker Solomon Ch'eishvili, who exported it to Russian cities, earning a certificate of praise in Moscow, in 1914.

After the establishment of the Soviet government, by 1924, mostly Chinese bushes were spread, as well as Japanese and Indian ones, partially. Natural hybridization took place and hybrid "Batumi tea" was generated. This is what was cultivated in Guria and Adjara during the Soviet period. First factories operated in Zedubani and Ozurgeti during the Soviet period. After collectivization, during the Soviet period, tea became the No. 1 culture spread in Guria. In 1933, 138,870 kilograms of tea leaves were harvested. Every large village had a tea factory; every village had plantations and reception points.

Research Institute of Tea and Subtropical Cultures was established in Anaseuli. Tea has displaced all the traditional agriculture that was cultivated before (ghomi, vines, etc.). Soviet propaganda declared the development of tea-growing as the greatest success of the Soviet state. In 1958, tea-picking machines were tested for the first time in Ch'anieti, Laituri, and Likhauri farms. In the 90s of the last century, the collapse of the Soviet Union had devastating effects for the Georgian tea industry. Georgian tea lost the Soviet market and with the background of political and economic instability, the state could not take care of maintaining a new market or industry. The war in Abkhazia also resulted in the loss of an important tea-producing region, reducing overall production level. Due to the delay in harvesting, the plantations became wild.

Georgia was a unique example among the countries with a tea industry, being tea-producing country with a long history, great experience in growing tea, plantations, professionals and scientists in the field, and great industrial potential as well. Until June 2010, Georgian packaged tea accounted for only 2% of the local market. According to the data of 2019, the amount of tea leaves produced in Georgia was 2000 tons. The largest producers are Guria and Samegrelo-Zemo Svaneti regions.

In recent years, the demand for "tea tours" has increased. Therefore, within the framework of the Guria Hospitality Route – Guria Tea Road project, the selected beneficiaries are individually trained and together with them, tourism products and services are created/established.

As for recent developments, it is worth noting: in 2023, Tea, Subtropical Crops and Tea Industry Institute of Agrarian University of Georgia and Tea Producers Association "Georgian Tea" organized a tea shop-meeting seminar in Anaseuli, where for the first time the new machine technology of green tea production was presented, the main effect of which is, that it represents a significant reduction of energy costs per unit of production.

The issue aroused great interest among people interested in tea production, who attended the seminar in large numbers. It is known that the production of tea is mainly based on hot technological processes, and therefore the specific share of energy costs in the production of products is significantly higher.

It should be noted that the proposed technology, in addition to energy saving, is environmentally safe, and the technological process is carried out using materials of food safety standards. Based on the mentioned data, a patent application for a "Tea leaf roasting device" was prepared, on which a corresponding patent certificate was received, based on which an application was made to the Shota Rustaveli National Science Foundation of Georgia for a grant project "Development of a New Machine Technology for Green Tea and Testing in a Real Environment", the project was financed. According to the project, tea leaf grinding and twisting machines were manufactured for small and medium-capacity tea production. However, according to the principle of operation, it can be made with a higher power calculation.

Multiple tests showed the effectiveness of the tea-making machine and its technical data were finally determined: the performance of the machine, taking into account the quality of tea leaves, is 35-40 kg/h, under the conditions of the given performance, 3.5-4 kW/h of energy was consumed, with this energy we got 145- 155 degrees temperature, and the duration of roasting is 3-3.5 minutes [32].

4.3. Georgian tea production

The main export market for Georgian tea is Mongolia. 34% of exports come on Mongolia. According to Geostat data, the export of tea from Georgia has decreased. In January 2023, 55.10 tons of tea (flavored or non-flavored) were exported from Georgia, which shows a 43% decrease compared to January 2022. As for annual statistics, 2,228.81 tons of tea was exported from Georgia in 2022, and 2,439.95 tons in 2021, correspondingly, the decrease was at the level of 9%. In 2022, Georgia received an income of 4,399.01 thousand dollars from the export of tea, and in 2021, 4,731.28 thousand dollars.

The main export markets of Georgian tea are: Mongolia - 755.34 tons, Kazakhstan - 480.63 tons, Ukraine - 328.23 tons, Azerbaijan - 236.77 tons, Belarus - 141.80 tons [33].

In the future, the growth of the market is more of a marketing challenge (intended in the broad sense) than that of production. In the future, tea production should be considered as a systematic project, which will be sold with a multi-stage experimental design.

As a result, it will be possible to offer tourists a safe tourism product (natural tea) in the form of relaxation, interesting attractions and a better understanding of local life, which will make their vacation more pleasant, useful and interesting.

4.4. Tea Production in the Guria region

There are large and small tea processing enterprises operating in the Guria region (Fig. 1). As can be seen from the diagram, 18 tea factories are operating in the region, employing 172 locals. Besides, they also hire additional workforce seasonally. The activities of the enterprises are not limited to tea production, some of them being engaged in agritourism activities as well, namely: Since 2019, a new tourism project "Tea Road" has been developed in Guria. The mentioned route was created by the "Tea Road Association", which unites organizations and family farms operating in the regions of Georgia

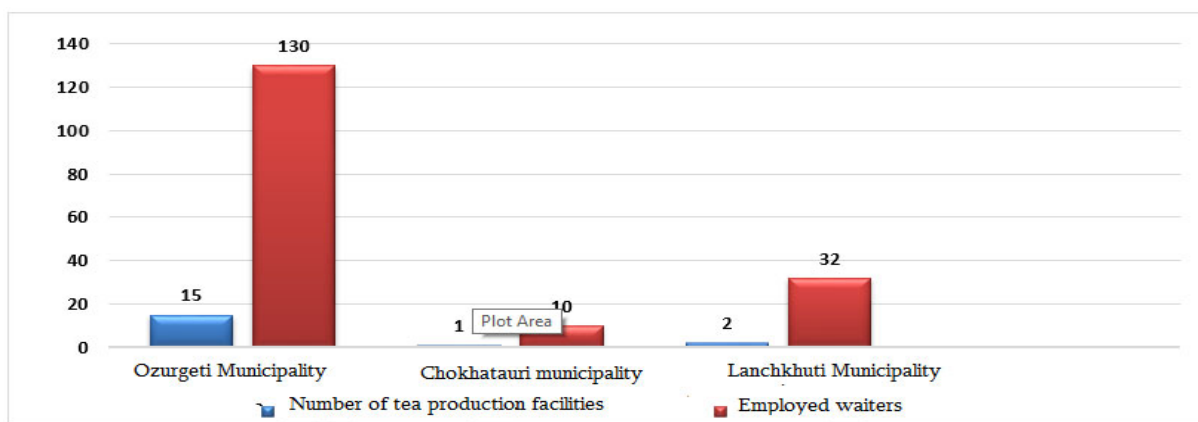


Fig. 1. Number of tea enterprises and employees.

For this purpose, the host enterprise and family farms of the "Tea Road" were selected in Guria Region. The "Tea Road" project includes four locations. The first signs of the "Tea Road" have already been installed on the roads leading.

In addition, both visitors and ordinary consumers are interested in the taste properties of tea, its medicinal purpose and most importantly the importance of its eco-product. Thus, for example: tea processing enterprise "Georgian Aroma 91" is located in the municipality of Lanchkhuti, in the vicinity of the center. There, they produce several types of tea: green, black, red, yellow, tea in orange, tea in lemon, tea in tangerine.

In addition, blackberry leaf tea is made from wild blackberry leaf new shoots at the enterprise. The product is distinguished with high antioxidant properties and contains vitamin C.

During the visit of the mentioned enterprise, it was found out that the enterprise is supplied with raw materials from the plantations of local farmers, which are located in several villages of the same municipality: Archeuli, Atsana, Mamati, Chanchati, Akhalsopeli, Lesa, Aketi and Potskhvereti. These tea farms are cultured, farmers do not use fertilizers and pesticides, tea bushes are mainly located in the highlands, the soil is clean. As for the production process, no chemical impurities, no coloring dyes are used. The product is natural. The obtained product is tested in the laboratory.

Tea is actively sold during the tourist season. Visitors have the opportunity to get involved in the process of picking tea, get to know the technology of tea production, taste natural products in the tasting room. 30 meters away from the enterprise, the entrepreneur has an agritourist facility, where it is possible to accommodate 20-25 visitors.

In addition, in order to popularize the idea, with the support of the United Nations Development Program, the National Tourism Administration, and Ozurgeti Municipality, a tea festival is held every year in Guria.

4.5. Experience of foreign countries in tea-growing and opportunities of sharing it

Tea tourism which integrates the natural environment of tea garden, tea leaves plucking, tea production, tea packaging and tea labour-culture. It is a new type of tourism which covers different types of tourist entertainment such as sightseeing viewing, roaming in tea garden, having tea in tea stall from different tea factory, watching evening tea-labour cultural performance etc.

In this regard, experience can be shared from countries such as China, India, Türkiye, Indonesia, and others. For the named countries, tea is one of the cultures having a significant role in rural development, food security, and poverty reduction. There it is the basic livelihood for millions of small entrepreneurs. Thus, Tea tourism contributes to the improvement of the socio-economic status of the local population by improving the household income of the local population.

Tea plays a significant role in Japan's history, as tea imported from China in the 9th century became one of Japan's trendiest cultures. At first, tea was the beverage of a limited, privileged people, but later it penetrated households of all levels in Japan and abroad [34]. An interesting object for tea-loving visitors is the Tea Museum, located on the Makinohara Plateau. The largest tea plantation is located nearby. Museum representatives regularly organize special exhibitions and receive visitors. In addition to the museum, tourists especially like the tea ceremony house, and the Japanese garden.

Chinese tea products are of high quality. It is a daily food product for Chinese people. It is cultivated on relatively scarce soils, in a checkerboard pattern, which is basically maintained and cultivated manually. It functions as both a tea museum and an institute for people who want to know all about tea - its history, plantation, culture related to tea farming, and tea drinking and refinement. According to the Food and Agriculture Organization of the United Nations, China is the largest planting and producing country of tea leaves.

India is one of the leading producers of tea in the world next to China. Tea is cultivated in many parts of the country. At present, tea is primarily produced in the North Eastern Region (predominantly in Assam and West Bengal) and in South India (particularly in Kerala and Tamil Nadu). It accounts for 1/3 of tea production.

The world tea market and consumer supply are mainly dependent on India and Sri Lanka. Visitors can relax and enjoy tea in the tea bungalows. Most of the tea bungalows are Victorian-style architecture - lofty wooden stilts, usually two-story, spacious rooms with exclusive fireplaces, bamboo and wood decor, antique furniture, and large verandas.

The development of tea culture in Indonesia began in 1825 mainly in Java and Sumatra. In the 50s of the last century, the country was the third largest producer of tea in the world. Culture is grown in the form of plantations. Their total area exceeds 230 thousand hectares. They have modern type factories for the primary processing of tea. They produce 210 thousand tons per year. Indonesia is trying to use all resources for the development of its country's economy, and for increasing the volume of tea production, that's why a large part of the production (77-80%) is exported [35].

Sri Lanka, after benefiting from the well-known brand image of Ceylon tea, can become not only a major supplier of quality tea to the global consumer; it can also become one of the leaders of the tea route in the tourism sector.

Visitors can enjoy a tea tour in Taiwan. They will learn about the history of tea, enjoy tea tasting and sightseeing.

Vietnam, although it is mainly known for its coffee plantations grown in the central highlands and around Dalat, is also the centre of the northern tea industry. Tea was first planted here in the 1880s by French colonists. Tea was consumed in Vietnam before that as well, but it was made with imported leaves. Currently, Tea tours are introduced in Vietnam. Visitors can simply observe the pickers, participate in the work process, tour tea factories, and taste tea. Visitors especially like lotus tea, which is made from green leaves with the aroma of the lotus flower acquired from the lotus.

Tea and philosophy related to it is well-established in the life of Iranians. A cup of tea is the first thing that Iranian will offer to the guest. Currently, tea culture is actively used in agritourism activities in the country, as agritourism is considered as a stimulator of the development of agriculture and tourism. Visitors are offered the involvement in farming activities, the opportunity to purchase products on the spot, and the service of accommodation at the farm.

Turkish tea is characterized by good taste properties. They elaborated a state program for tea production development, thanks to which the area of tea plantations and the number of processing factories in the country has increased significantly in the last 20-25 years. This is also determined by the demand for tea. Namely: on the street corners, cafés, restaurants, taverns, playrooms, workplaces, and simply where people may have a reason to gather or spend time. Tea can be enjoyed everywhere while enjoying meals or during work breaks. Drinking tea is the cornerstone of sociability and the primary ritual of hospitality.

It follows, that tea tourism is a unique experience that requires knowledge of local culture, traditions and the tea industry. India, Kenya, China and Sri Lanka are the four main countries that dominate the world's tea industry. At present, most of the named and other tea producing countries are pursuing tea tourism as a diversified concept with the main stream of revenue generation in the form of bulk tea and value added tea.

Thus, the strategy of the tea producing countries should aim at promoting and expanding the demand for tea. In addition, it is necessary: greening conditions, focusing on the construction of agricultural infrastructure, increasing investments in human power.

5 Conclusions

Based on the available data, it can be said that the Guria region has a perspective in terms of tea culture development of and the promotion of the "Tea Tour". Nevertheless, there are problems too. Namely, during the research, the factors hindering the development of tea-growing were identified:

- Measures to rehabilitate tea-growing is not being carried out;
- There is a lack of financial resources;
- In this direction, there is a lack of the interest from the state and local self-government;
- Tea processing industry is developing at a slow pace;
- The quality of Georgian tea has improved, but the volume of production is still at a low level, which is why it cannot meet the local or export demand.
- People employed in the sector of tea-growing and agritourism have a lack of knowledge and experience

The examples of foreign experience, which has been discussed above, clearly show that tea culture has a long history of spreading, confirmed by the growing interest of tourists in tea sightseeing in recent years, which has made tea tour activities popular. However, a high-level specialized model of tea tours has not yet been established. Tea tours are associated with creative activities, including the art, literature, storytelling, cultural ceremonies, cuisine, and gastronomy. Tea tourism is recognized as a form of niche tourism in production and consumption. Besides, tea tourism can be commercialized or simply be as a pleasurable process. Commercial tea tourism refers to business holidays. It is a place where the company finances a vacation for its employees for celebrating holidays or production successes. Thus, tea is one of the most widely consumed drinks in the world. It includes a variety of medicinal, cultural, and symbolic properties. Tea plays a significant role in the expression of modern national and regional identities, which in turn is delivered to tourists in the form of tea houses, museums, tea trails and tea tastings.

The Experience of tea-producing countries and the analysis of prospects for the development of the "Tea Road" in Georgia show, that in Georgia it is necessary to elaborate and implement a "State Program for the Development of Tea-growing", in which local farmers will be involved.

The development of tea production is facilitated, in the case of the Guria region, by the subtropical climate and soil conditions, which provide ample opportunities for the production of tea culture. So, farmers should: 1) Cultivate only high-yielding and high-quality tea varieties; 2) Implement the technological processes of cultivation, maintenance, and exploitation based on scientific recommendations; 3) Process the harvested raw materials in the small processing factories existing in the system of cooperative enterprises.

In addition, at the initiative of the Ministry of Environment and Agriculture, specialists from the Food and Agriculture Organization of the United Nations (FAO) and the European Bank for Reconstruction and Development (EBRD) started working on the research document "Overview of the Tea Sector in Georgia" in 2020. This document should be a guide for the development of the tea sector in the future.

Implementation of above mentioned measures will help:

- Banning the use of herbicides and pesticides at the legislative level;
- To eliminate the shortage of ecologically clean tea;
- It is necessary to make corrections in technological lines, e.g. It is preferable to use the Japanese and Chinese methods, which will add more value to Georgian tea;
- It is necessary to start standardization of tea which should be shared by all tea producers;

- It is necessary to improve existing varieties, arrange nurseries and demonstration plantations;
 - Arrangement of Agritourism facilities;
 - Planning and organizing tea tours;
 - Also, meeting the needs of the local market and visitors;
 - Increasing farmers' incomes and employment in the future;
 - Developing tea export products and tea production.
- Solution to problems existing in Georgian tea economy, can be:
- The knowledge of modern technologies;
 - Development of tea production, so that low-quality imported tea is replaced by high-quality local tea;
 - Finding selling markets;
 - Orienting towards both domestic and foreign markets, so that it is targeted on different types of users;
 - Organizing tea tours, which is at the initial stage in the region and needs development;
 - Involvement-interest of the state and the local self-government;
 - Elaborating tea culture development program;
 - Finding export markets and investments;
 - Focusing on creating an environmentally friendly product.
 - To overcome the mentioned problems, it is important to study the experience of foreign countries and then adapt it to our business.

Despite the lack of tea production in Georgia today, Georgian entrepreneurs are trying to settle in the local market and introduce unique Georgian tea to the world's consumers in the future.

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