

Funded by the European Union





### Advancing resource efficient and cleaner production in Georgia

## -The RECP methodology-

**Resource Efficient and Cleaner Production (RECP)** is the integrated and continuous application of preventive environmental strategies to **processes**, **products**, **and services** to increase efficiency and reduce risks to humans and the environment. RECP is all about producing with fewer resources while minimizing environmental impacts and increasing overall productivity. For **Small and Medium-sized Enterprises (SMEs)**, the RECP methodology is an effective instrument to lower production costs whilst improving the SMEs' competitive advantage and applying environmentally friendly practices. As well, RECP is considered an effective tool to introduce and promote Circular Economy principles among SMEs.

### "GEORGIA'S NATURAL - AROMA PRODUCT" LLC - processed fruits and vegetables -

#### **Company overview**

Address: Tbilisi Key products: juices, jams, processed fruits and vegetables No. employees: 10 Main markets: Georgia (local markets) and abroad Founding year: 1985 Management systems: ISO 9001: 2015, ISO 22000: 2018, FSSC 22000, Kosher/OU, Halal/IFRC ASIA, Kiwa BCS Oko-Garantie GmbH - Germany, EC/NON EU, NOP/USDA, JAS,



"GEORGIA'S NATURAL" is the largest, export-oriented, organic farming group in Georgia. For over 30 years, it has been actively engaged in organic farming and harvesting, as well as gathering wild crops, controlling the quality of organic raw materials and its processing and, consequently, creating premium quality products in accordance with organic standards. In the past 20 years, "Georgia's Natural" also started producing and exporting premium-quality, organic, processed and semi-processed products at the international level. These are 100% pure juice, pulps, IQF frozen fruits, sauces, spices, canned fruits and dry products. Presently, its branded products (designed for the premium segment), are on the organic shelves of international retail stores and bio markets in 40 countries. The company also enjoys solid partnerships in 35 countries and across four continents. On average, it processes about 643.8 tonnes of raw materials and produces around 151.8 tonnes of finished goods (in jars and bottles). Motivated to decrease its energy consumption, improve its environmental and technical performance, and expand to new markets, the company joined EaP GREEN in 2015. This publication shows the company's experience reported after the monitoring exercise conducted in 2020, five years after the programme ended.

### **Benefits**

CCOF.

- Implementation of 5 RECP options (focused on energy efficiency)
- O Short payback period for the required investment
- Reduction of water consumption per tonne of product: 9%
- O Reduction of thermal energy consumption per tonne of product: 18%
- Energy savings that generated a reduction of 23.3 tonnes of CO<sub>2</sub>eq/year







Action implemented by





## The project's approach



During the **RECP monitoring**, the production site was examined and several RECP options were identified, out of which the following five were prioritized and gradually implemented by the company staff. Some of them were low-cost measures, whilst others required considerable investments:

**RECP option 1. Insulation of the steam pipes.** In order to decrease the excessive thermal losses from the distribution system, all piping systems were thermally insulated.

**RECP option 2. The repair and upgrade of the boiler.** To optimize the energy consumption and maintenance costs associated with the boiler, the steam boiler was repaired, upgraded, and regulated.

**RECP option 3. Installation of a steam recovery tank.** As the old steam distribution system constantly needed fresh water (with the used steamed water being lost through the sewage system), and to avoid thermal losses from the steam while extending the lifetime of the boiler, a steam recovery system was installed. This also entailed a thermally insulated tank to allow the device to avoid steam losses and recirculate the used water (as condensate).

**RECP option 4. Installation of an operation system for the pasteurization and boiling processes.** In order to reduce the energy consumption in the pasteurization process, an automatic operation system with a more optimized performance was installed.

RECP option 5. Installation of water-saving and recycling technology. To decrease water consumption and reuse the water stored in the closed circle, a water recycling system was installed in the bottle washing line.

## Saving achievements

### **RECP MEASURES**

Option 1: Insulation of the steam pipes Option 2: The repair and upgrade of the boiler Option 3: Installation of a steam recovery tank Option 4: Installation of an operation system for the pasteurization and boiling processes



### **ECONOMIC KEY FIGURES**

	Investment (Euro)	Saving (Euro/year)	PBP (years)
Option 1:	360	730	0.5
Option 2:	5,000	1,870	2.7
Option 3:	500	610	0.8
Option 4:	800	380	2.1
Option 5:	5,000	1,840	2.7
Total:	11,660	5,430	

### **RESOURCE SAVINGS**

	Water ( <i>m³/year)</i>	Energy ( <i>kWh/year</i> )
Option 1:	-	24,455
Option 2:	-	64,525
Option 3:	-	21,275
Option 4:	-	13,137
Option 5:	1,073	-
Total:	1.073	123,392

#### TOTAL **POLLUTION REDUCTION** CO2-eq Wastewater (t/vear) (*m³/year*) Total: 23.3 1.073



# **Company insight**

After it implemented the selected RECP measures, the company planned to increase its production capacity. As well, "Georgia's Natural" also planned to increase production guality, increase the awareness of its staff, and improve the management system to better tackle energy and resource use, and to decrease the overall generation of waste.

The company encountered challenges in terms of its operation management and the excessive consumption of energy. Before the RECP Demonstration Project, the staff was only partly aware of certain deficiencies with regards to energy efficiency, waste management, and the recycling of wastewater. As a main lesson learned, the RECP experience helped the company staff understand the importance of constant monitoring the production processes and making upgrades on the management side. Thanks to it, the company now plans to improve production quality and increase its production capacity, said Mr. Irakli Gvelesiani, Product Manager

The introduction of RECP has been part of the EU-funded programmes: EaP GREEN (2013-2017) and EU4Environment Action (2019-2022) executed by UNIDO. In this context, "Georgia's Natural" joined the RECP training and assistance programme under EaP GREEN, and was monitored under EU4Environment. Follow-up visits have also been conducted under EU4Environment, to check on the implemented RECP options after the EaP GREEN Programme ended. EU4Environment helps the EU's Eastern Partnership countries preserve their natural capital and increase people's environmental well-being by supporting environment-related action, demonstrating and unlocking opportunities for greener growth, and setting mechanisms to better manage environmental risks and impacts. For more details, visit: www.eu4environment.org



UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION

**United Nations Industrial Development Organization** Ms. Tatiana Chernyavskaya EU4Environment Project Manager Tel: +43 1 26 0 26 5520 E-mail: t.chernyavskaya@unido.org

This publication has been produced with the assistance of the European Union. Its contents are the sole responsibility of UNIDO and do not necessarily reflect the views of the European Union.



**Energy Efficiency Centre Georgia** 0160, 19 D.Gamrekeli Str. VI floor, office 611, Tbilisi, Georgia Tel: +99 53 2224 25 42 E-mail: eecgeo@eecgeo.org EEC. 330 Web: www.recp.ge

