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Advancing resource efficient and cleaner production in Armenia

-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 can effectively lower production costs whilst improving the SMEs' competitive advantage and applying environmentally friendly practices. RECP is also an effective tool to introduce and promote Circular Economy principles among SMEs.

"Sam Har" LLC - Food and beverage production -

Company overview

Address: Abovyan, Kotayk region
Key products: carbonated beverages, juices, compotes, jelly, jam, and marinades
No. employees: 15 (with additional 45 seasonal workers)
Main markets: Armenia, Belarus, Chile, France, Lithuania, the Netherlands, the Russian Federation, the USA
Founding year: 2003
Certifications: ISO 22000:2018



"Sam Har" LLC specialises in the production of carbonated beverages (lemonade and mineral water) under the trademark "Sipan." In addition, since 2009, the company expanded to compote production, and since 2013, to producing canned food in a new, relocated building. Since 2010, it has produced 15 varieties of compote and jam, two types of jelly, 10 types of natural juice, and four types of marinade under the trademarks "Sipan," "Anush," and "Arevik." The manufacturing facility operates seasonally from May to October, while the labelling and packaging takes place all year-round, based on orders. The company sources its raw materials from premium suppliers to ensure the high-quality of its goods. Adhering to the ISO 22000 international standard, its products are well-regarded both in Armenia and abroad. The company also maintains an orchard on its premises, cultivating peaches, apricots, and white sweet-cherry. Motivated to achieve more energy-efficient production, the company participated in the RECP Demonstration Project under EaP GREEN (2013-2017). This publication shows the company's experience reported after the monitoring exercise conducted in 2021, four years after the programme ended.

Benefits

- Implementation of 16 (2 partly) measures as part of the 4 recommended RECP options
- Reducing electricity consumption by 50,720 kWh/year (3.2%)
- Reducing water consumption by 5,830 cubic metres/year (2.2%)
- Reducing natural gas consumption by 0.3%
- Reducing the consumption of materials by 110 tonnes/year
- Reducing emissions by 12 tonnes of CO₂-eq per year

Action implemented by:



The project's approach

The RECP assessment examined the production site and identified 16 measures grouped in four RECP options. All 16 measures have been either fully implemented (14 measures) or partly implemented (2 measures):

RECP option 1. Waste reduction and recycling: Organic waste such as dry quince core, pomegranate peel, apricot and peach kernels are sold to relevant organisations (tea, food, perfume, and cream manufacturers). Peach seeds are repurposed as absorbents for cleaning alcoholic beverages, and other organic waste (excluding apricot and peach kernels) is transformed into bio-humus, for further use as organic fertiliser or for sale.

RECP option 2. Water saving and reuse: The water used to wash the raw materials (excluding the water after the final wash) is repurposed for irrigation purposes, as it doesn't contain side chemicals. Additionally, a water-storing basin was built to wash the manufacturing area and irrigate the garden.

RECP option 3. Material saving and use reduction: Annual staff training sessions take place at the beginning of each season to prevent material and product loss during the processing of raw materials. To minimise the rejection of the final products, the raw materials are received only through signed contracts with suppliers. Sealing cups are meticulously checked for defects, and the quality control device is closely monitored.

RECP option 4. Energy efficiency measures: Strategies like keeping the unused equipment off, repairing and adjusting equipment, installing new, energy-efficient/LED lamps, separating the storage area for finished products from the general manufacturing area, and heating the storeroom only during winter have all increased energy efficiency and reduced consumption.

Partly implemented measures:

- **Water reduction and reuse:** The water resulted from the final wash of raw materials will be used as primary wash for the raw materials.
- **Energy efficiency:** A regular inspection of the thermal networks (external pipelines) will be implemented, and thermal isolation will be implemented, as needed.

Saving achievements

Other opportunities

MAIN IMPLEMENTED ACTIONS

16 measures (out of which two were partly implemented), grouped into four RECP options, were implemented by the company staff at the end of the monitoring report.

ECONOMIC KEY FIGURES

	Investment (Euro)	Saving (Euro/year)	Overall payback period (years)
4 RECP options:	7,800	7,580	1

RESOURCE SAVINGS

	Energy (kWh/year)	Materials (t/year)	CO ₂ (t/year)
4 RECP options:	50,720	110	12



Thanks to the RECP Project, "Sam Har" LLC has significantly enhanced product quality, occupational health and safety, and overall environmental performance. The production of compote, jam, jelly, natural juices, and marinade, coupled with the systematic optimisation and restructuring of the production processes, has ensured continuity and minimised risks and interruptions. By maintaining an adequate internal climate, investing in energy efficient systems, and the implementation of the proposed RECP measures, "Sam Har" LLC is poised to capture larger markets and achieve economic, social, and environmental benefits.

Its proactive approach resulted in improved housekeeping, enhanced process controls, equipment modifications, and product enhancements, among other positive outcomes. Moreover, the company is keen on continuing the implementation of resource efficiency measures, as this has consistently delivered environmental, financial, and social benefits.

The introduction of RECP has been part of the EU-funded programmes: **EaP GREEN** (2013-2017) and **EU4Environment Action** (2019 - 2024) executed by UNIDO. In this context, "Sam Har" LLC 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 the implemented RECP options after the EaP GREEN Programme ended. EU4Environment helps the six EaP partner 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

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