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EU4Environment
Green Economy in Eastern Partner Countries

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.

"GREEN AGE" GREENHOUSE CHARENTSAVAN - FOOD PRODUCTION

Company overview

Location: Charentsavan
Key products: fruits and vegetables (tomatoes, peppers, aubergines, and strawberries)
No. of employees: 3
Main markets: Armenia
Founding year: 2021

"Green Age" Greenhouse Charentsavan specialises in growing fruits and vegetables, particularly tomatoes, peppers, eggplants, and strawberries. Founded with a dedication to producing environmentally friendly and pollutant-free foods, the greenhouse operates on the principles of Circular Economy. Within its ecosystem, fish are also cultivated, with their bioactive waste serving as a natural fertiliser for plant growth. Motivated to achieve a 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

1. 5 RECP options (focused on energy and resource efficiency)
2. Short payback period (6 years for all 5 RECP measures)
3. Potential economic savings of 10,582 EUR per year
4. Reduction of 238.8 tonnes of CO_2- eq per year

Action implemented by:

OECD BETTER POLICIES FOR BETTER LIVES | UNECE | UN environment programme | UNIDO | THE WORLD BANK IBRD • IDA | WORLD BANK GROUP

The project's approach

The RECP assessment examined the production site and identified several RECP options, out of which five were prioritised by the company, with the last three already being implemented:

RECP option 1. Expanding the surface area of the growing plants with a perlite layer: This would increase the efficiency of the greenhouse, albeit at the expense of increasing the amount of crucian carp in the fishpond.

RECP option 2. Increasing the number of fish from 60 to 240: The rise would boost plant productivity.

RECP option 3. Cultivating basil during the summer months: When the schoolchildren are on vacation, the measure could provide an additional income (the estimated revenue for six harvests over three months is 1,813 EUR).

RECP option 4. Installing photovoltaic (PV) solar panels: In total, 50 panels with an output of 40 kW would help reduce electricity consumption and allow for new opportunities to grow vegetables (three harvests in a year).

RECP option 5. Covering the greenhouse with a polyethylene film: This would mitigate the adverse effects of the cold season by insulating the greenhouse with polyethylene film, creating an air space between the inner and outer layers. This isolated air acts as an insulator, retaining heat within the greenhouse.

SAVING ACHIEVEMENTS

The implemented RECP actions

OPTION 1	Expanding the surface area of the growing plants with a perlite layer
OPTION 2	Installing photovoltaic (PV) solar panels
OPTION 3	Cultivating basil during the summer months:

Economic key figures

RECP OPTIONS	INVESTMENT (EUR)	SAVINGS (EUR/YR)	PAYBACK PERIOD (YR)
All five options:	23,620	10,582	6

Resource savings

RECP OPTIONS	MATERIALS (TONNES/YR)	ELECTRICITY (KWH/YR)
All five options:	0	3,600

Total pollution reduction

RECP OPTIONS	TOTAL CO_2-EQ (TONNES/YR)
Total:	238.8

Company insights

If the proposed RECP measures are consistently implemented, the entity will significantly enhance product quality, occupational health, and its overall environmental performance. The employees have been briefed on the key methods and principles of RECP to achieve environmentally and economically sustainable production, and the suggestions will be taken into account. The benefits of implementing RECP measures include optimising production processes, investing in new equipment for resource recycling and energy reduction, maximising the use of renewable energy sources, improving work practices, and reducing the entity's carbon footprint.

The introduction of RECP has been part of the EU-funded EU4Environment Action and executed by UNIDO. In this context, **Green Age Greenhouse Charentsavan** joined the RECP Demonstration Project to be monitored under EU4Environment. Follow-up visits have also been conducted to check on the implementation of the recommended RECP options. 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**

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.

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

Contact:
REC Caucasus Armenia National Office
Aygestan str. 7, building N 2, 0070, Yerevan
Web: **www.recp.am**
Tel: **+374-115-75-148**