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Management of Natural Resources and Safeguarding of Ecosystem Services for Sustainable Rural Development in the South Caucasus (ECOserve)



The context

The ECOserve regional environmental programme started in December 2018 to improve the preconditions for sustainable pasture management (SPM), with particular attention on the energy security of the rural population in the countries of the South Caucasus. Environmental awareness raising and education are among the key measures of the programme. In Armenia, the programme supports the Government on pasture management and to reduce the anthropogenic pressures on key natural resources. It also supports in implementing the Nationally Determined Contributions (NDC). It is commissioned by the German Federal Government, co-financed by the EU and implemented by Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH.



Project name	Management of Natural Resources and Safeguarding of Ecosystem Services for Sustainable Rural Development in the South Caucasus (ECOserve)
Commissioned by	Federal Ministry for Economic Cooperation and Development (BMZ)
Co-financing Partners	European Union (EU)
Budget	25.6 mln. EUR (regional); In Armenia including 7.4 mln EUR EU co-financing
Duration	December 2018 – June 2025



Left to right: Sustainable Pasture Management; EcoEpicener.

Since 2020, ECOserve in Armenia is co-financed by the EU to implement the EU4Sevan project, thus expanding the scope of the programme by including a component on water resources management. Since 2022, another co-financing from the EU Delegation to Armenia further expanded the project's activities to include energy efficiency and renewable energy in communities and households, aimed at improving the energy efficiency and enhancing environmental protection and resilience in Armenian communities.

Among the key factors that have resulted in pasture and forest degradation are the overuse and underuse of pastures in the country, excessive fuelwood use, lack of alternatives and low level of environmental awareness. The rural population suffers from energy poverty, and people depend on natural resources to meet their basic heating needs. Next to energy, agriculture is the sector that is most affected by climate change. Although rural communities have traditionally and historically adapted to climate change, current climate projections are likely to exceed the adaptive capacity of the communities. The sustainable management of natural resources including natural pastures and grasslands remains key for the climate protection and adaptation of the rural communities.

Our approach

ECOserve in Armenia is implemented by GIZ jointly with the Ministry of Territorial Administration and Infrastructure (MTAI), the Ministry of Environment, and the Ministry of Economy of the Republic of Armenia. The programme has the following main fields of intervention:

- Information on pasture and grassland/ rural energy is used for decision-making.
- Institutional framework for sustainable pasture management (SPM) is improved.
- Pilot activities for SPM, Energy Efficiency (EE) and Alternative Energy (AE)
- Environmental protection of Lake Sevan
- Environmental education and awareness-raising.

To promote the sustainable and biodiversity-conscious utilisation of natural resources, the programme adopts holistic strategies encompassing policy interventions, capacity development initiatives, and community engagement initiatives and measures.

The benefits

Over six years implementation, ECOserve contributed to the improvement of the preconditions for sustainable and biodiversity friendly management of natural resources (in Armenia mainly pastures, grasslands and Lake Sevan), with particular attention to the energy security of the rural population.

Sustainable Pasture Management

- Nationwide mapping of Armenian pastures and grasslands, replacement of traditional crops with organic cultivation of new non-traditional crops as well as organic high yield perennial crops to reduce the impact on the environment.
- Legal support to the MTAI to create a favorable legal framework for pasture and grassland use.
- Capacity development at the Armenian Ministry of Economy for the future use of GIS mapping models.
- Support to the Programme Coordination Platform for Sustainable Management of Natural Fodder Areas: Pastures and Grasslands of RA.
- Support food security through food and fodder production and pasture improvement activities as alternative solutions for decreasing pressure on pastures and ensuring income for the rural population.
- Feasibility study on the development of public- private partnership (PPP) mechanisms for the improvement and efficient use of pastures as a replicable approach for SPM.

Improved Energy Efficiency and security in Rural Households

ECOserve has been working on marketable approaches to increase energy efficiency and/or provide alternatives to reduce the use of fuelwood (and dung) for heating in rural areas.

The energy efficiency of selected stoves working on solid biomass fuel was assessed, and energy-efficient models identified, developed and distributed. Campaigns on energy efficiency and "Financial and Ecological Literacy" reached over 3 600 people in 10 provinces. A reduction of 580 tonnes of CO₂ can be attributed to measures to introduce more energy-efficient stoves.



Although Armenia's energy needs remain dominated by imported natural gas, energy security and energy efficiency are key to the economic development of Armenia. By 2040, Armenia's target is to bring the share of renewable energy to 60% in energy production. The EU supports Armenia in this transition path towards clean energy and in its efforts to develop a climate-friendly energy sector, strengthen energy security, remove investment barriers for clean energy finance, and increase the share of renewable energy in the energy mix. With co-financing by the EU, the programme works to ensure that communities and households have better access to energy efficiency and sustainable energy solutions, thereby contributing to the improved energy security of the rural population and the conservation of natural resources. It does so by supporting the introduction of small-scale energy efficiency (EE) and renewable energy (RE) for low-income rural or urban households through cost-sharing, awareness-raising, and capacity-building and investments in EE and RE demonstration pilots with high impact on a large proportion of the local population in predominantly energy-poor communities.

Environmental protection of Lake Sevan



Lake Sevan is the most significant source of freshwater, irrigation water, aquaculture, and hydropower source in Armenia. Its condition has a direct impact on the region's environmental health and Armenia's economic potential. Since Armenia's independence in 1991, the deterioration of water supply and sanitation infrastructure and related service delivery mechanisms have impacted the quality and management of water, making it a crucial issue on the development agenda. Besides the untreated municipal wastewater, diffuse pollution from agriculture, e.g., from mineral and organic fertilizers and manure, is affecting Lake Sevan's water quality.

With co-financing by the EU and in cooperation with UNDP, the programme works to improve the ecosystem governance and enhance the environmental protection of Lake Sevan by:

- improving water monitoring and management capacities for the Lake's watershed,
- promoting ecosystem-friendly and water-protecting land-use and cultivation practices,
- enhancing wastewater management capacities and
- fostering awareness and information availability for the protection of Lake Sevan among basin communities, the private sector, and other stakeholders.

The programme contributed to the development of roadmaps for establishing a regular hydrobiological monitoring and for improving periodic monitoring of pesticides, pollutants and of pollution hotspot for evidence-based decision-making; agroforest and agricultural models have been introduced to restore degraded arable and pastureland, introduce a sustainable management of manure, regulate soil moisture and nutrition and ensure an ecologically clean and high agricultural yield. Decentralized wastewater treatment solutions have been developed and introduced to the Gavar, Martuni, and Vardenis hotspots of untreated wastewater discharge. Coupled with several formats of awareness-raising measures, EU4Sevan has brought the environmental protection of Lake Sevan high into the Armenian Government agenda, driven significant improvements in water resource management while – at the same time - mitigating the impact of climate change and providing socio-economic benefits for the Armenian population.

Environmental Education and Awareness-Raising

A strategic collaboration with the Armenian National Agrarian University strengthened environmental education and research. The programme contributed to the introduction of new BSc and MSc programmes in Sustainable Agriculture and Precision Agriculture, a new Training Programme in Green Agriculture and to the improvement of MSc programmes in Forestry Science & Organic Agriculture

The environmental education center "EcoEpicenter" was established at the Institute of Botany after A.L. Takhtajyan in cooperation with WWF Armenia and KfW.

"Restoration of Riparian Zones in Armenia"

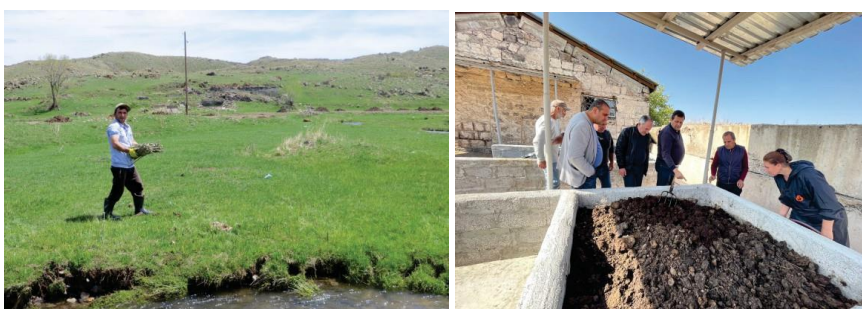
To mitigate the socio-economic impacts of the COVID-19 pandemic, a response measure in particularly affected areas took place in form of short-term employment opportunities for over 1000 people who had lost (part of) their income. The short-term employment not only offered a source of income to beneficiaries but also contributed to restoring riparian areas in the Gegharkunik region of Armenia:

- More than 1 million willow and poplar cuttings were planted in the riparian zones of 6 rivers.
- A total of 376 150 kg of solid waste, out of which 1107 kg recyclable plastic and glass, was removed during clean-up measures along 10 rivers flowing into Lake Sevan.

Food Security

The war of aggression against Ukraine resulted in food security risks for Armenia who registered challenges in importing of products such as wheat, barley, grain, seed varieties, feed combinations, mineral fertilizers, etc.

To mitigate the socio-economic impacts of the war and further contribute to reducing the pressure on pastures and other natural resources, ECOserve supported the production and use of local fertilizers of organic origin and the establishment of a Circular AgroFood Model at the Armenian National Agrarian University.



Left to right: Planting of willow and poplar cuttings; Food security measures



Left to right: P Cabbage Harvest at Zolakar village; "Friends of Sevan" theatrical performance

Published by	Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH	Design	T. Yeghiazaryan, L. Carnevali
Registered offices	Registered offices Bonn and Eschborn, Germany	Photo credits	GIZ Armenia
Project	Management of Natural Resources and Safeguarding of Ecosystem Services for Sustainable Rural Development in the South Caucasus (ECOserve) GIZ Armenia 59 Hanrapetutyan Street 0010 Yerevan, Armenia https://www.giz.de/en/worldwide/204888.html	The programme is co-funded by the European Union and the Federal Ministry for Economic Cooperation and Development GIZ is responsible for the content of this publication.	
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