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Promoting Green Deal Readiness in the Eastern Partnership Countries

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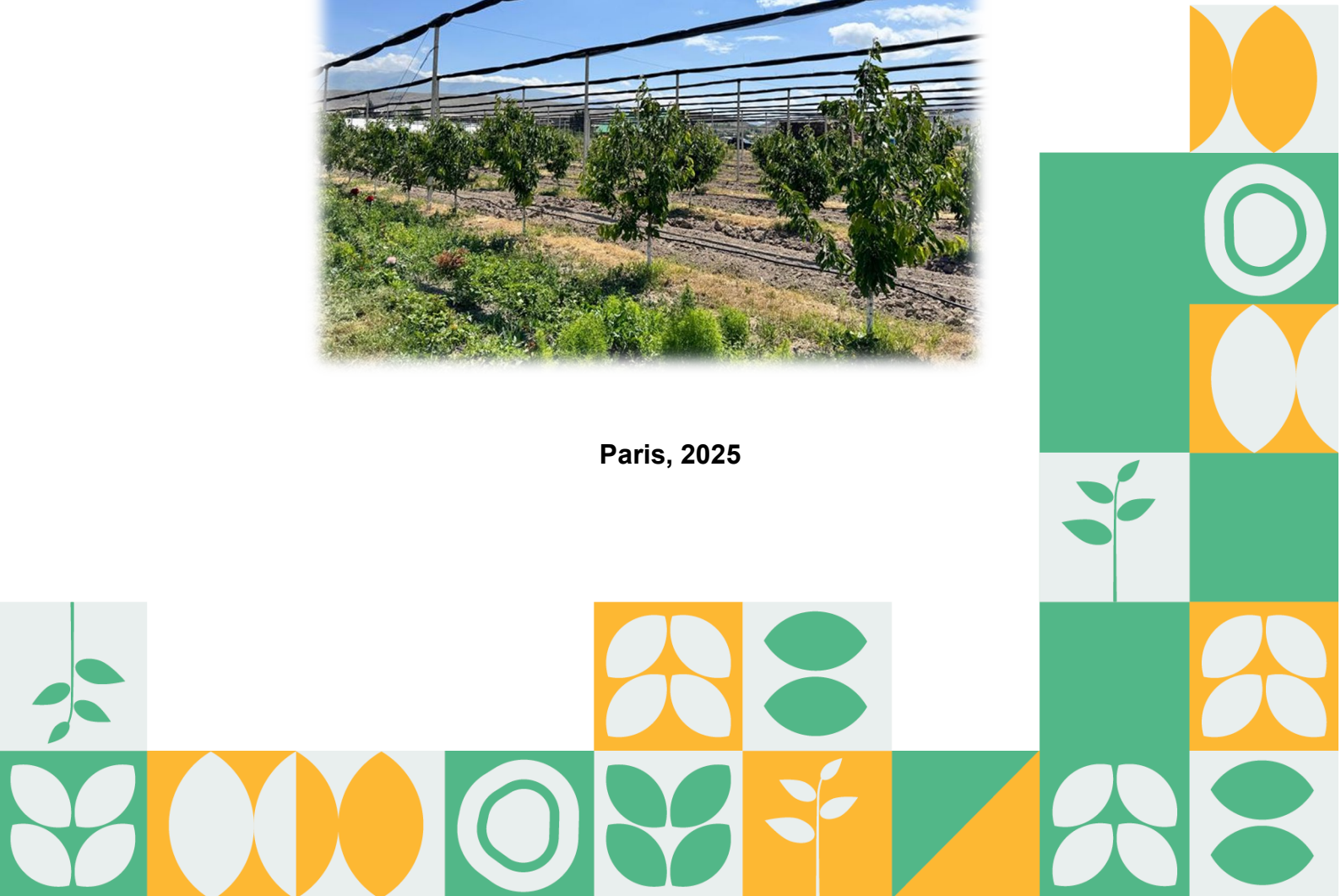
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Armenia's policy frameworks for climate change adaptation and resilience in agriculture

Stocktaking report for Output I



Paris, 2025



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Background and acknowledgements

The purpose of this report is to take stock of Armenia's policy frameworks for climate change adaptation and resilience in agriculture (as of June 2025) to inform future project activities.

This report was prepared within the framework of the project on "Promoting Green Deal Readiness in the Eastern Partnership" (PROGRESS).

PROGRESS is funded by the International Climate Initiative (IKI) of the German Federal Government and is implemented by the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH, as the lead agency, in partnership with the Organisation for Economic Co-operation and Development (OECD), the Regional Environmental Centre for the Caucasus (REC), the European Business Association (EBA) Moldova and the Institute for Economics and Forecasting of the National Academy of Sciences of Ukraine (IEF).

PROGRESS aims to support the EU Eastern Partnership countries (Armenia, Azerbaijan, Georgia, Moldova, Ukraine) with achieving long-term mitigation, adaptation and sustainable development consistent with the EU Green Deal objectives and 1.5°C pathways of the Paris Agreement. Another project objective is to promote the competitiveness of fruits, nuts and berries from the Eastern Partnership countries on the EU market, with two specific products selected in each country based on a value chain analysis (apricot and raspberry in Armenia). PROGRESS lasts during 2023-2028 and has a total budget of EUR 20 million.

The GIZ selected apricot and raspberry as two subsectors of particular focus for the PROGRESS project in Armenia based on selection criteria and following consultations with the Ministry of Economy, sector experts and specialists. The selection was based on six criteria: economic potential, environmental impact, social inclusion, institutional development, opportunities for the value chain development, and processing potential.

The OECD leads implementation of two out of the Project's five Outputs:

- Output I on evidence-based national policies and frameworks for climate change adaptation and resilience in agriculture, and
- Output IV on access to and mobilisation of green finance in agriculture

This report was developed as part of Output I on national policies and frameworks. Output I aims to analyse the state of national policies and frameworks for climate change adaptation and resilience in agriculture, with a focus on horticulture (fruits and vegetables), provide recommendations for improvement and share best practices, especially those of the EU. It also aims to improve the understanding of the EU Green Deal and EU standards among farmers and farming associations and promote public-private dialogue.

Concurrently, the OECD carried out stocktaking on mobilisation of green finance in agriculture under Output IV, the results of which are presented in a separate report.

Following the Executive Summary and the Introduction (Chapter 1), Chapter 2 provides an overview of Armenia's main policy frameworks for climate change adaptation and resilience in

agriculture and a few key issues relevant for the EU Green Deal approximation, as well as the main institutions involved. Chapter 3 summarises relevant provisions of the EU Green Deal, the Farm to Fork Strategy, the EU Climate Adaptation Strategy, and key EU import standards for fruits and berries.

The report was prepared based on desk research and findings from an in-country stocktaking mission to Yerevan in September 2024. An online discussion was organised to present and discuss the draft findings on 18 June 2025 with representatives of Armenia's Ministries of Economy and Environment as well as the PROGRESS implementation partners.

Olga Olson, OECD Environment Directorate, managed the report preparation under the supervision of Krzysztof Michalak, OECD Environment Directorate. The main authors are: Olga Olson, OECD Environment Directorate (Chapters 1 and 3), and Environment Group consulting firm in Armenia led by Erik Grigoryan (Chapter 2 on local policy frameworks, and gaps and recommendations). Thomas Dworak of Fresh-Thoughts Consulting provided useful inputs. Thanks are extended to Béatrice Marois, OECD Environment Directorate, for her help with report finalisation.

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Abbreviations

ADB	Asian Development Bank
AFD	French Development Agency
AI	Artificial Intelligence
AMD	Armenian dram
BMUKN	German Federal Ministry for the Environment, Climate Action, Nature Conservation and Nuclear Safety
BRCGS	British Retail Consortium Global Standards
CAP	Common Alerting Protocol
CBI	Centre for the Promotion of Imports from developing countries
CBIT	Capacity Building Initiative for Transparency
CEPA	Comprehensive and Enhanced Partnership Agreement
CJSC	Closed joint-stock company
EAEU	Eurasian Economic Union
EBA	European Business Association
EBRD	European Bank for Reconstruction and Development
EMS	Environmental Management Systems
EU	European Union
EUR	Euro
EW4All	Early Warnings for All
FAO	Food and Agriculture Organisation
FDA	Food and Drug Administration
FSIB	Food Safety Inspection Body
GCF	Green Climate Fund
GDP	Gross Domestic Product
GEF	Global Environment Facility
GHG	Greenhouse Gas
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit (German Corporation for International Co-operation)
Global G.A.P.	Global Agricultural Practices
GMO	Genetically modified organism
GMS	General Marketing Standards
Ha	hectare
HACCP	Hazard analysis and critical control points
IADAAM	Irrigated Agriculture Development in Ararat and Armavir marzes
IBF	Impact-Based Forecast
IEF	Institute for Economics and Forecasting of the National Academy of Sciences of Ukraine
IFAD	International Fund for Agricultural Development
IFS	International Food and Safety Standards
IKI	International Climate Initiative

ISO	International Organisation for Standardisation
LLC	Limited Liability Company
MHEWS	Multi-Hazard Early Warning Systems
MRV	Measurement, Reporting and Verification
NAP	National Adaptation Plan
NC5	Fifth National Communication
NDC	Nationally Determined Contribution
NGO	Nongovernmental Organisation
OECD	Organisation for Economic Co-operation and Development
PROGRESS	Promoting Green Deal Readiness in the Eastern Partnership
RA	Republic of Armenia
REC	Regional Environmental Centre for the Caucasus
SME	Small and Medium-sized Enterprise
SNCO	State Non-commercial Organisation
SPS	Sanitary and Phytosanitary
SQF	Safe Quality Food
TA	Technical Assistance
UN	United Nations
UNDP	United Nations Development Programme
UNFCCC	United Nations Framework Convention on Climate Change
USD	American dollar
WFP	World Food Programme
WMO	World Meteorological Organization
WTO	World Trade Organization

Executive summary

The agricultural sector contributes significantly to Armenia's economy, employment, and exports. Horticulture accounts for almost half of agriculture's gross monetary output. However, the sector is highly vulnerable to climate change, especially the impacts of extreme weather events, already leading to economic losses.

This stocktaking report has identified progress and recent developments in several key components of Armenia's policy framework for climate change adaptation and resilience in agriculture:

- The policy framework for climate change adaptation in the country's agricultural sector is well developed and is guided by several documents, including the 2021 National Adaptation Plan (NAP), which largely follows the European Commission's guidance on NAPs; the 2023-26 Action Plan for the Implementation of the Agricultural Sector Strategy with sector-specific measures for agriculture (a new plan will be developed for 2026-30); regional (marz) plans which foresee the development of intensive orchards and greenhouse farms; and the Strategy of the Main Directions Ensuring Economic Development in the Agricultural Sector of the Republic of Armenia for 2020-30. The Ministry of Environment is also developing a new Climate Law which aims to establish the legal foundation for developing and implementing effective climate policies, including on climate change adaptation.
- In April 2025, Armenia initiated the process of accession to the European Union (EU), which provides an impetus for aligning Armenia's legislation with that of the EU including the EU Green Deal. The EU-Armenia Comprehensive and Enhanced Partnership Agreement (CEPA), in force since 2021, provides a strong basis for co-operation on the environment, agriculture, and sanitary and phytosanitary policies.
- Armenia has made important progress in modernizing its network of monitoring stations. The Hydrometeorology and Monitoring Center Non-Commercial Organisation (SNCO) provides hydrometeorological information to the agricultural sector and has launched a new website and a mobile application. The government has allocated funds to the center to set up an early warning system for weather and climate-related risks and hazards, and is seeking international support in this area.
- Since 80% of Armenia's land is subject to desertification risk, the Land Code and the Law on Melioration of Agricultural Land put emphasis on land preservation and soil fertility. Several government programmes aim to improve agricultural land use in view of Armenia's high percentage of abandoned land, enhance information on the agricultural sector and consolidate small-size farms.
- The agricultural sector accounts for 70% of the country's water consumption, and climate change is likely to increase the need for water preservation measures. The water policy framework includes the Water Sector Adaptation Plan and Programme of Measures for

2022-26, and government programmes to improve and modernize irrigation. Armenia has also approximated some components of the EU Floods Directive.

- Armenia has a roadmap for implementing relevant CEPA measures related to dangerous pests and diseases and plans to establish a working group and a rapid response system, including for those diseases that result from or propagate due to climate change.
- Armenia has recently adopted legislation for establishing a certification system for seeds and planting material and has designated a certification authority. Moreover, the Ministry of Economy has been testing local drought and heat-resistant vegetable crop varieties.
- A new Law on Chemical Substances will regulate the production, import, export, use and classification of pesticides and industrial chemicals in the country, as well as establish a register of chemical substances under the authority of the Ministry of Environment.

The stocktaking report further identified several priority areas for reform to improve the policy framework for climate change adaptation and resilience in agriculture.

- *Climate change adaptation plans*: Strengthening institutional capacity and adopting indicators to monitor implementation of the NAP.
- *Monitoring of climate change impact*: Modernization of monitoring stations, strengthening of technical and human capacity of the Hydrometeorology and Monitoring Center SNCO, and improving environmental data, forecasting, climate assessment and modelling.
- Setting up an *early warning system* in the agricultural sector.
- *Soil management*: Trying natural means for maintaining soil fertility (e.g. crop rotation, organic fertilization, creation of forested zones etc.).
- *Water management*: Finalization of implementation of the Water Sector Adaptation Plan and Programme of Measures for 2022-26, including setting up mechanisms for wastewater reuse, mainstreaming adaptation measures in water legislation, adoption of a Flood Risk and Hazard Management policy and a drought policy, and developing a model flood management plan and a drought emergency management plan.
- *Irrigation*: Continued installation and renovation of irrigation systems.
- *Pest, disease and invasive species management*: Alignment of Armenia's legislation with the Agreement on the Application of Sanitary and Phytosanitary Measures (SPS Agreement) to adopt the concept of pest- and disease-free areas and areas of low pest or disease prevalence.
- *Climate resistant seeds and plants*: Facilitation of the discovery and import of climate resistant crops and promotion of their use, support to nurseries through better certification of seeds/seedlings and planting material, training, financing, and ensuring the quality and transparency of planting material.
- *Extension and advisory services*: Expansion of extension and advisory services as they have been significantly reduced, especially by increasing staff of the Department of Agricultural Extension, Innovation and Monitoring of the Ministry of Economy.
- *Innovation and technology*: Development of a systemic approach to innovation in the field of climate change adaptation, and promotion and enablement of the use of climate change technologies.
- *Support to small-scale farmers*: The predominantly small size of farms leads to knowledge gaps and difficulties meeting international standards; and accessing markets, credit and

modern technologies. At the same time, agricultural co-operatives do not function well due to lack of trust and mismanagement.

- *Better alignment with the CEPA:* The current governmental CEPA Implementation Roadmap does not reflect the agricultural measures of the CEPA except for one exception, and the government plans to update it during 2025-26.

In addition, the report identified some key issues for approximating the EU Green Deal which will also reduce the environmental impact of the agricultural sector:

Pesticide and fertiliser use

- Armenia has recently revised legislation to facilitate easier access to imports of agrochemicals and to protect the environment during storage and use of mineral fertilisers. The government is testing new organic fertilisers to counteract nitrogen fertilisers, which are very popular among farmers.
- The policy framework will benefit from regulations on sustainable pesticide use after their registration and promoting availability of quality pesticides on the market, improving enforcement and traceability of agrochemicals, management of nitrogen fertiliser overuse.

Development of organic agriculture

- Armenia plans to amend its Law on Organic Agriculture and bylaws to introduce clauses on inspection and certification organisations, and to provide further support to developing organic agriculture. Several organic certification bodies are operational in the country.
- However, Armenia's principles of accreditation of organizations carrying out inspection and certification of organic products should be better aligned with those of the EU. In addition, there is a need for regulations on control of organic products, and clarification and revision of rules and procedures for organic certification.

The future work under the PROGRESS programme will focus on providing support to Armenia on a selected number of topics from the ones listed above.

1 Introduction

Impact of climate change on Armenia's agriculture

Armenia's contribution to global anthropogenic greenhouse gas emissions is very low at 0.02%, but the country has been subject to climate change impacts. During 1929-2016, Armenia's annual average temperature increased by +1.23°C compared to the baseline period (1961-90) (Ministry of Environment of the Republic of Armenia, 2020^[1]). There have been more **natural disasters** such as droughts, early frosts, forest fires and floods (Government of the Republic of Armenia, 2023^[2]). Observed climate changes include an earlier onset of droughts by 20 days, an expansion of drought-prone zones, an increased risk of frostbite, a larger size of hailstones and more intense hailstorms (Ministry of Environment of the Republic of Armenia, 2020^[1]).

Almost 80% of Armenia's territory is subject to **desertification** (Government of the Republic of Armenia, 2023^[2]; Ministry of Environment of the Republic of Armenia, 2020^[1]). Analysis show that land degradation during 2016-19 has likely occurred due to the intensification and increase in droughts, an increase in incidents of forest fires and the expansion of sanitary logging during 2000-15 (Government of Armenia, 2023^[3]). Without action to address land degradation, almost 0.2 million ha of additional pastureland and 0.05 million ha of cropland is very likely to be degraded by 2050, and the severity of degradation will increase. This could lead to a 37% reduction in rainfed crop yields and to agricultural production losses of USD 363 million (close to 1.9 percent of GDP), more than double the current impacts of degradation (World Bank, 2024^[4]).

The effect of climate change varies among land zones and crops according to different terrains and climates. For example, it is usually more severe in low-lying and medium-altitude areas as compared to high-land mountainous zones (Government of the Republic of Armenia, 2023^[2]). It is predicted that without action, **climate change impact will have a cumulative macroeconomic cost of 1-3% of GDP in 2060** (World Bank, 2024^[4]).

Armenia's **agricultural sector** is the economic sector with the highest dependence upon weather conditions. It is subject to hazards such as hailstorms, early frosts, heavy rainfalls, landslides and droughts. Agriculture relies on land resources and is the largest water user in the country, accounting for 70% of total water consumption (World Bank, 2024^[5]). As temperatures rise, the average water requirement of Armenia's crops could double (World Bank, 2021^[6]). Melting glaciers could contribute to the importance of water storage and management (World Bank, 2021^[6]). However, it should also be noted that under all scenarios of future climate change, the agricultural growing season could actually extend by 10-40 days in Armenia (World Bank, 2021^[6]).

The agricultural sector has already felt the **impact of climate change**, resulting in economic losses and changes in climatic conditions. Registered economic losses include AMD 110 billion

(USD 0.28 billion¹) over a six-year period due to natural disasters, with estimated yearly losses at AMD 15-30 billion (USD 0.04 – 0.08 billion) (Government of the Republic of Armenia, 2019^[7]; Ministry of Environment of the Republic of Armenia, 2020^[1]). The largest damages have been recorded from hail, with the total hail damage during 2014-17 amounting to AMD 61.2 billion (USD 0.16 billion) (Ministry of Environment of the Republic of Armenia, 2020^[1]). Because of the lack of anti-hail systems and their ineffective operation, a large number of farms suffer huge losses almost every year (Government of the Republic of Armenia, 2020^[8]).

It is expected that Armenia's agricultural sector **will undergo significant changes** due to climate change in the next century. Hydrometeorological hazards, frosts, heatwaves and droughts will have the biggest impact on the sector. Expected changes include: (Ministry of Environment of the Republic of Armenia, 2020^[1]):

- a reduction in soil humidity by 10-30%
- an increase in the soil water deficit by 25-30% due to more frequent droughts, low soil moisture and a lack of irrigation water
- a decrease in the productivity of irrigated land plots by approximately 24% due to a decline in river flows by 25%
- increased degradation of lands and natural pastures, including a reduction in crop yields in grasslands by 4-10% (19-22% in alpine and subalpine areas) by 2030
- a reduction in crop yields for fruits and vegetables by 8-14% by 2030 due to expected unstable weather conditions, strong storms, winds and downpours
- possible damage to agricultural lands and irrigation infrastructure due to natural disasters such as soil erosion, mudflows and floods.

Brief description of the agricultural sector

The **agricultural sector** contributes substantially to Armenia's economy and rural livelihoods. It accounts for 8.5% of Armenia's GDP, and its share of the country's total employment is 52% according to World Bank data (World Bank, 2023^[11]; World Bank, n.d.^[12]). The total area of Armenia's farmland occupies 58% of the country's total land area (World Bank, 2022^[13]). Agricultural exports account for 10% of the country's total exports (Invest in Armenia, 2025^[15]). The government aims to further increase agricultural production and to double its volume during the decade of 2019-29 (EBRD, 2022^[15]).

Benefiting from a favorable climate and fertile soil, **horticulture** accounts for almost half of the country's gross monetary agricultural output² (Invest in Armenia, 2025^[15]). About 60.5 thousand farms in 10 regions of the county are engaged in fruit growing, viticulture and berry production, with the size farm ranging from 0.1-200 ha (Prime Minister of the Republic of Armenia, 2021^[16]). Armenia has a high level of self-sufficiency in vegetables and berries, and horticultural products make up almost 18% of its agricultural exports (Invest in Armenia, 2025^[15]; Government of the Republic of Armenia, 2019^[7]). Russia is the main export market for Armenia's fruits and vegetables, receiving 95% of such exports (FAO, 2023^[13]).

The **food processing industry** is well developed and has good logistics and distribution services (FAO, 2023^[13]). There are 69 fruit and vegetable processing companies and 350 dried fruit

¹ Please note that Monetary conversions to USD are approximative and use March 2025 rates.

² The total gross agricultural output in 2024 was USD 2.4 billion.

producers with Eurasian Economic Union (EAEU), Food and Drug Administration (FDA), International Organisation for Standardisation (ISO) and Hazard analysis and critical control points (HACCP) certifications (Invest in Armenia, 2024^[17]). Fruit and vegetable exports comprised over 5% of Armenia's exported processed food in 2023 (Invest in Armenia, 2024^[17]).

Challenges facing the fruit and vegetable sector

The fruit and vegetable sector of Armenia has various challenges that must be addressed for it to fully realise its potential:

- The sector has limited access to modern production and management practices and a low level of mechanisation. This includes limited use of modern and efficient irrigation, which exists in only 5% of the fruit and vegetable production area (FAO, 2023^[13]).
- The sector suffers from low productivity and limited market competitiveness.
- Rural infrastructure for product packaging, cooling and storage is also underdeveloped.
- There are labour constraints due to an aging rural population and youth migration.
- Extension and advisory services, and scientific research are limited, and there are no certified nurseries.
- Approximately 50% of arable land in Armenia is used improperly or ineffectively, mainly due to the insufficiency or the absence of irrigation, land plot fragmentation, complications in land ownership transfer, poorly developed infrastructure and limited access to financial resources (News.am, 2024^[19]; FAO, 2024^[20]).
- Environmental challenges faced by the sector include low efficiency of water and land resources, and intensive use of fertilisers (EBRD, 2022^[15]).
- The predominantly small size of farms leads to knowledge gaps and low capacity to meet international standards as well as difficulties in accessing markets, credit and modern technologies. Overall, 80% of the 345 875 farms are less than 2 ha in size, and 60% are less than 1 ha in size. Only 1 percent of farms are more than 10 ha in size (FAO, 2023^[13]).
- Weak farmer organizations and co-operatives hinder market integration and limit smallholders' bargaining power, access to inputs, and ability to scale up sustainable practices. As of 1 January 2024, Armenia had approximately 153 agricultural co-operatives, but most of them are not functioning well due to lack of trust, legal knowledge and poor management (Ministry of Economy of Republic of Armenia, 2024^[21]; IFAD, 2018^[22]).
- Informality and non-transparency in the product supply chain (FAO, 2023^[13]).
- Lack of platforms for dialogue with the government representatives and poor information flow.

Box 1.1. Apricot and raspberry production in Armenia: Economic trends, challenges and climate change impacts

The Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) selected apricot and raspberry as two subsectors of particular focus for the PROGRESS project in Armenia based on selection criteria and following consultations with the Ministry of Economy, sector experts and specialists. It was based on six criteria: economic potential, environmental impact, social inclusion, institutional development, opportunities for the value chain development, and processing potential.

Apricot and raspberry production: Economic trends

Apricots are considered to be the “national” fruit of Armenia with significant cultural, historical and economic importance. They make up a high share of the country’s fruit and vegetable exports. In 2023, the value of apricot exports was USD 6.2 million, equivalent to 23.8% of the value of exports of the sector “Edible fruit and nuts; peel of melons or citruses” (Armstat, 2024^[18]). The annual average growth rate of the country’s apricot production was 24% between 2019-22, and the production is likely to continue to grow (FAO, 2023^[13]; Ampera Consulting, 2024^[9]). Almost all apricot exports (98%) go to the Russian market despite some logistical challenges. Only negligible quantities are exported to France, Georgia, Germany, Ukraine and the United Arab Emirates (Ampera Consulting, 2024^[9]). The EU countries tend to prefer European apricot varieties which have a different taste and colour (Ampera Consulting, 2024^[9]). State support programmes have enabled the establishment of about 130 ha of so-called apricot “intensive orchards”³ during 2019-23 which use modern technology and irrigation techniques (Ampera Consulting, 2024^[9]).

Raspberry production, on the other hand, has emerged in Armenia only recently. Its production has been lower in Armenia than in the neighbouring countries and has not yet accessed foreign markets (Ampera Consulting, 2024^[9]). Official government statistics on raspberry production are not available, because only aggregated statistics on berry production are provided (Ampera Consulting, 2024^[9]). Raspberry producers are predominantly small-scale growers and family-owned enterprises who also produce other fruits and crops (Ampera Consulting, 2024^[9]). Raspberry production has been benefiting from subsidies provided by the Government of Armenia to non-traditional crops.

Challenges to apricot and raspberry production

Apricot production faces the following additional difficulties to the ones described in the main text for the agricultural sector (Ampera Consulting, 2024^[9]):

- Insufficient irrigation is the biggest impediment to the development of the apricot value chain.
- There is limited availability of quality pesticides, limited knowledge of pesticide sellers, lack of control of pesticide use and traceability, and overuse of pesticides.
- Farmers lack professional knowledge and experience.
- Nurseries lack capacity, professional knowledge and financing, and lack certified planting material, which can lead to pest and disease infestations.
- Food waste is an important challenge. For example, fruits are damaged during transportation, because of poorly maintained roads and a lack of temperature control during transportation.
- Exporting apricots from Armenia faces significant logistical challenges, particularly at the Upper Lars border crossing between Georgia and Russia.
- Vulnerability of apricots to early spring frosts. It could be worthwhile to try to stimulate creation of apricot orchards in other marzes starting with zoning the other marzes and assessing resistance to frost of the apricot varieties in the other marzes.

Raspberry production has the following additional challenges in addition to the ones affecting the agricultural sector (Ampera Consulting, 2024^[9]):

- Lack of transparency and assurance for the quality of planting material.
- Susceptibility to hailstorm damage.
- Scarcity of irrigation, particularly during hot and drought seasons. Raspberry plants require a significant amount of water as well as humus-rich, fertile and moist soil: Water scarcity can impact the growth of raspberry plants, their health and yield.
- Lack of knowledge among farmers.
- Damage to the raspberries during transportation on rough rural roads, frequent non-respect of the ideal temperature in cold storage facilities at cargo terminals, and rough and uncoordinated manual handling which often takes place under direct sunlight.
- High costs of crop management (specifically labour-related costs) compared to other crops including apricot. There is a gap in the regulatory framework for subsidizing costs and promoting the raspberry market, including exports.

Both the apricot and the raspberry production takes place in two types of farms, **traditional** and so-called “**intensive orchards**”. Intensive orchards usually have better access to technology and expertise. For example, apricot production in traditional farms uses surface irrigation, leading to high water consumption and loss. Intensive apricot orchards, on another hand, use mostly drip irrigation systems leading to more

efficient water use. However, the availability and suitability of irrigation water and the knowledge and expertise in intensive apricot orchards can still be improved (Ampera Consulting, 2024^[9])

Environmental impacts specific to apricot and raspberry production

- **Apricot** production is at a particular risk of late spring and early autumn frost, hail and drought, especially the conventional orchards, which lack the technology and know-how to deal with natural hazards. Almost all intensive orchards have anti-hail nets, but they lack tools to address frost. There is little research or knowledge of new apricot varieties that would be resistant to frost and climate change (Ampera Consulting, 2024^[9]). Apricot trees have been more affected by pests and diseases in recent years due to climate change. Apricot yields could decline by 5% in irrigated lands and by as much as 28% in non-irrigated lands in the 2040s if there is no government action on water supply for irrigation (World Bank, 2014^[10]).
- **Raspberry** production is at risk of hail, late spring and early frosts. Hail can severely damage raspberry plants and consequently delay the harvesting period. On a positive note, raspberries are less affected by pests and diseases compared to many other crops (Ampera Consulting, 2024^[9]).

Source: (Ampera Consulting, 2024^[9]); (World Bank, 2014^[10]); (Armstat, 2024^[18]); (FAO, 2023^[15]).

³ According to the State Support Programme (approved by the Government Decision No. 927-L of 3 June 2021), “intensive orchards” are modern and high-yielding vineyards and orchards of fruit, berries, and non-traditional high-value crops. They contribute to developing and improving the efficiency of fruit growing and viticulture; increasing the production and export of competitive grapes, fruits and berries; stimulating production of high value non-traditional cultures; reducing the risks caused by hail and other natural and climatic factors; climate adaptation; and increasing farmer incomes.

2 Overview of Armenia's policy frameworks for climate change adaptation and resilience in agriculture

Armenia's policy frameworks for climate change adaptation and resilience in agriculture

1. Climate adaptation plans for agriculture and the main measures foreseen

1.1 National Adaptation Plan

According to the Nationally Determined Contributions (NDC) of the Republic of Armenia (Government Decision No. 610-L of 22 April 2021), the [National Adaptation Plan](#) (NAP) of the Republic of Armenia, formally known as the **National Action Programme of Adaptation to Climate Change and the List of Measures for 2021-2025** was approved by the Government Decision No. 749-L of 13 May 2021. It was developed by the Ministry of Environment with funding from the Green Climate Fund (GCF) and supported by the United Nations Development Programme (UNDP) Armenia via the **National Adaptation Plan to Advance Medium and Long-Term Adaptation Planning in Armenia** project through consultations with the private sector, academia and civil society.

The NAP serves as a roadmap for ensuring the mainstreaming of adaptation and implementation of a NAP in sectorial, regional and local development, respective financial planning processes and aims to co-ordinate various adaptation efforts. The NAP is not designed to replace existing planning processes, but rather to complement them. It identifies barriers to adaptation, expected impact of climate change on agriculture, the current situation, objectives and principles, institutional arrangements, provisions for monitoring, and a list of measures.

There are provisions for six-month reports on the NAP's implementation.

Out of the 26 adaptation measures of the NAP, over 20 measures have already been implemented via the UNDP-GCF **National Adaptation Plan to Advance Medium and Long-term Adaptation Planning in Armenia** project. The measures of relevance for the agricultural sector include:

- A sectoral adaptation plan for agriculture has been developed and incorporated into the respective sectoral strategy and action plan, namely the [2023-2026 Action Plan for the](#)

[Implementation of the Agricultural Sector Strategy](#) approved by the Government Decision No. 1222-L of 20 July 20 2023 (more information provided below). The [2024 Progress Report of 2023-2026 Action Plan for the Implementation of the Agricultural Sector Strategy](#) was released by the Ministry of Economy in Q1 2025.

- A [Water Sector Adaptation Plan and its Programme of Measures for 2022-2026](#) has been developed and approved by the Government Decision No. 1962-L of 3 November 2022.
- Several regional (marz) adaptation plans have been developed: adaptation plans of [Shirak and Tavush](#) marzes were developed with the support of UNDP-GCF (CC Armenia, 2022^[23]), and adaptation plans of Gegharkunik and Syunik marzes were developed with the support of UNDP “Supporting Nationally Determined Contributions towards Climate Risk Resilience in Armenia” funded by Japan. The regional adaptation plans include climate adaptive measures, including related to the establishment of intensive orchards and greenhouse farms.
- An **Inter-Agency Co-ordination Council for the Implementation of the Requirements and Provisions of the United Nations Framework Convention on Climate Change (UNFCCC) and Paris Agreement** in Armenia was established in 2012 and upgraded in 2021 ([Prime Minister’s Decision No. 719-A of 6 July 2021](#)). The purpose of the Council is to ensure the fulfilment of obligations undertaken by Armenia under the UNFCCC and Paris Agreement, including co-ordination and monitoring of implementation of the NAP along with NDC, the **Long-Term Low Greenhouse Gas Emission Development Strategy (LT-LED) Strategy** and implementation of the 13th Goal of the United Nations 2030 Agenda for Sustainable Development (Climate Action).
- The [Report on “Agriculture and Water Sectors Indicators for Monitoring and Evaluation of Climate Change Adaptation”](#) has been prepared. It will serve as a guideline for monitoring and evaluating progress of climate change adaptation in the agriculture and water sectors (CC Armenia, 2023^[24]). The UNDP is supporting the Ministry of Environment with the preparation of guidelines and templates for data collection, monitoring, evaluation of adaptation policies and measures within the project on “Capacity Building Initiative for Transparency” (CBIT).

Implementation of the following measures is pending:

- a decree on the approval of the strategy on implications of climate change adaptation-oriented technologies (2025)
- implementation analysis of the first NAP (2025)
- a National Action Programme of Adaptation to Climate Change and List of Measures 2026-2030 (2026): it is envisaged to develop the plan for 2026-2030 by July 2026, in the scope of GCF NAP 2 Readiness Programme

1.2 Action Plan for climate change adaptation in agriculture

Government Decision No. 1222-L of 20 July 2023 approved a three-year action plan for climate change adaptation in agriculture, namely the [2023-2026 Action Plan for the Implementation of the Agricultural Sector Strategy](#). The Action Plan includes a number of measures aimed at

enhancing climate adaptation in the agricultural sector, developed in the framework of the UNDP-GCF Armenia's National Adaptation Plan project⁴:

- implementing a pilot project on agricultural insurance, with monitoring and evaluation of the results
- implementing effective targeted support mechanisms for production of certified seed, saplings and planting materials suited to changing climate conditions
- deploying sustainable and efficient technologies for land and water use
- developing an early warning system
- promoting development of the greenhouse industry
- encouraging intensive horticulture for farmers (high-yielding orchards of grapes, fruit, berries, and non-traditional high-value crops)
- supporting development of organic farming
- preventing the spread of diseases and pests caused by climate change (CC Armenia, 2023^[25]).

1.3 Other relevant documents

The [Strategy of the Main Directions Ensuring Economic Development in Agricultural Sector of the Republic of Armenia for 2020-2030](#) outlines the priorities for the country's agricultural policy. The vision is to have “sustainable, innovative, high value-added agriculture in harmony with the environment, ensuring care for natural resources, producing organic products and ensuring the well-being of the people living in rural areas”.

The agricultural sector's transition from traditional small-scale production towards modern, technology-enabled, market-driven and value-added agriculture is part of the government's overall vision of widespread prosperity.

This strategy aims to:

- promote farmer-to-farmer and farmer-to-agribusiness linkages to transition to a more viable agriculture sector
- prioritise high value commodities, reorientation to high value export markets, emphasise value-added activities such as the greenhouse sector and agro-processing
- promote quality (improving, promoting and monitoring the quality of Armenian agricultural products)
- include young people in all agriculture development activities – from agriculture production to processing
- promote product and market diversification
- introduce risk management measures ranging from hail protection systems to universal access to high quality agricultural insurance for producers and agribusiness
- promote climate change adaptation, resilience and environmental sustainability through an increased focus on climate change awareness, adaptation and mitigation strategies (e.g. improve monitoring of climate change in the agricultural sector, promote climate

⁴ Updates on the implementation of the listed measures are presented in the respective areas of this Report.

smart agricultural practices, support dissemination of climate adaptation inputs like drought resistant seeds) while also working to ensure that the agricultural sector development is informed by a focus on resource sustainability including, most critically, good water and soil management practices

- promote technology-focused modernization: invest in the digitization of the agricultural sector as well as mechanization/automation, irrigation, the greenhouse sector and post-harvest infrastructure development (e.g. cold chains, modern storage systems).

The **Strategy** and the **EU-Armenia Comprehensive and Enhanced Partnership Agreement (CEPA)** share common objectives focused on agricultural modernization, sustainable rural development, and regulatory alignment. Both documents emphasize the need to strengthen phytosanitary systems, and improve agricultural education and extension services.

The [Food Security System Development Strategy and Action Plan for 2023-2026](#) outlines the national strategy to increase the level of self-sufficiency in vital foodstuff, replenishment and expansion of reserves as well as provision of economic opportunity to purchase food that corresponds to the minimal physiological norms for all segments of the population. The 2023-26 Action Plan includes 50 measures related to the availability, accessibility and use of food, sustainability of supply, and the solution of existing problems, including the implementation of a system for effective land and water resource management in light of climate change and assessment of the possibilities for effective cultivation of crops under changing climatic conditions.

The Ministry of Environment is developing a [Climate Law](#) with the technical assistance of the UNDP, to bridge gaps in legislation to help effectively implement national commitments under the Paris Agreement. The draft law aims to establish the legal foundation for developing and implementing effective climate policies, including with respect to planning and implementing adaptation to climate change. It aims to create the legal basis for integrating adaptation considerations into sectoral policies (CC Armenia, 2023^[26]). It includes a definition of climate change adaptation as “the ability to adapt to actual and projected climate change in order to reduce damages, mitigate adverse effects, and take advantage of opportunities”. Its approval is expected in December 2025.

2. Monitoring and forecasting the impact of climate change on the agricultural sector

Armenia’s [Law On Hydrometeorological Activities](#) from 7 February 2001 regulates the hydrometeorological activities of the country and determines their legal basis, and aims to meet the information needs of the public, government officials, and legal and physical entities about hydrometeorological phenomena and processes. The law provides guidance on hydrometeorological monitoring, provision of weather forecasts (including on temperature and precipitation extremes) and dissemination of information among interested parties and the general public.

The Hydrometeorology and Monitoring Center State Non-Commercial Organization (SNCO) under the Ministry of Environment provides information on actual hydrometeorological conditions and their expected changes as well as the current and forecasted climate information to state agencies, regional and local self-governance authorities, the population, and different sectors of the economy, including agriculture. The center ensures Armenia’s adherence to commitments outlined in the World Meteorological Organization (WMO) Convention. According to its charter, the Hydrometeorology and Monitoring Center SNCO carries out the following types of activities:

- implementation of laboratory research and analysis

- compilation and provision of hydrogeological information
- implementation of studies of water quantity and quality at observation points of a special observation network of groundwater regimes
- provision of hydrometeorological information and of specialized hydrometeorological services (includes agrometeorological information); recently, the center created a dedicated webpage on [Agrometeorological information](#) on its website, which includes agrometeorological forecasting, information, and bulletins;⁵ it releases information on its website and on social media
- radar observations of atmospheric phenomena and provision of relevant information services
- research using geographic information systems and remote sensing technologies

Under an ongoing Global Environment Facility (GEF)-UNDP project, the Hydrometeorology and Monitoring Center SNCO will develop the Fifth National Communication (NC5) of Armenia. The NC5, which is expected to be developed in 2025-2026, will include climate change scenarios and a component on sectoral vulnerability assessments.

Within the UNDP project funded by Japan called “[Supporting Nationally Determined Contributions towards Climate Risk Resilience in Armenia](#)”, a unified electronic information management system, a new official website and mobile application were designed for the Hydrometeorology and Monitoring Center SNCO. Due to those activities, operational analysis of existing data on weather forecasts, climate risks and environmental monitoring will be directly available to the public and other stakeholders.

In recent years, the Government of Armenia has prioritised the modernisation of its environmental monitoring, which has led to some technological improvements. An [Action Plan of Government Programme 2021-2026](#) (Government Decision No. 1902-L of 18 November 2021) envisages modernisation of systems of hydro-meteorological observation and forecasting as well as information processing, analysis, archiving and provision, and improvement of the quality and availability of services. This has resulted in the procurement by the state of nine automated meteorological stations and 20 sensors for measuring deep soil temperature and snow height, which were installed in the Kotayk, Tavush, Gegharkunik and Ararat marzes. Within international co-operation projects, the Hydrometeorology and Monitoring Center SNCO has received specialized equipment and personnel training, with a positive impact on its services. Notably, a UNDP project funded by Japan called “[Supporting Nationally Determined Contributions towards Climate Risk Resilience in Armenia](#)” resulted in the procurement of 11 automatic meteorological stations installed in the Lake Sevan basin and the Syunik and Tavush marzes during 2022-2023 (UNDP, 2023_[27]). In addition, the EU4Sevan project, financed by the EU and Germany’s Federal Ministry for Economic Co-operation and Development, supported the establishment of an automated modern monitoring meteorological station on the shore of Lake Sevan in 2024. This station digitally collects and processes data on various weather conditions. The project handed over the station to the Hydrometeorology and Monitoring Center SNCO (Ministry of Environment of the Republic of Armenia, 2025_[28]).

However, the monitoring network is still outdated and suffers from the lack of capacity. Close to half of the monitoring stations of the Hydrometeorology and Monitoring Center SNCO have observation sets that are at least 70 years old (World Bank, 2018_[29]). In the subsectors of focus

⁵ As of 17 April 2025, the webpage on “Agrometeorological information” is only available in Armenian.

(apricot and raspberry), the lack of technical and human capacity of the Hydrometeorology and Monitoring Center SNCO makes it challenging to provide detailed information on hailstorms and frosts (both ex-ante and ex-post). In turn, this does not allow to properly assess and address negative impacts of these events on yields of apricot and raspberry.

Under the **Early Warnings for All (EW4All) initiative**, launched by the United Nations (UN) Secretary General in 2022, the WMO conducted a rapid assessment of the technological and human capacities of the Hydrometeorology and Monitoring Center SNCO in 2023. It was based on general and hazard-specific observations and forecasting for various common hazards in Armenia, including for agriculture, such as hail, drought, frost, river floods and wind. The WMO identified significant capacity gaps that hinder the quality of the center's services. Specifically, the WMO identified that the Hydrometeorology and Monitoring Center SNCO benefits from average observational and forecasting capacity, but it lacks network maintenance, calibration and quality control, and radar observations. The assessment further revealed that service delivery is constrained by insufficient financial and human resources, including training. Furthermore, while the center provides basic warning services for all sectors, it has not yet developed impact-based forecast (IBF) capacity, a common alerting protocol (CAP) capacity, or a Multi-Hazard Early Warning Systems (MHEWS). Some hazard-related risk maps exist, but are not used operationally (WMO, 2023^[30]).

Currently, the WMO is preparing a comprehensive report on the assessed needs of observational and forecasting capacities of the Hydrometeorology and Monitoring Center SNCO⁶. As part of this process, in March 2025, the WMO approached the UN Resident Co-ordinator Office to plan the UN system's engagement in supporting the capacity enhancement of the Hydrometeorology and Monitoring Center SNCO.

3. Early warning systems for farmers and food processing companies

Armenia has regulations outlining procedures in case of major disasters such as an external military attack or hazards such as radiation and chemical (FAO, 2022^[31])⁷.

The Hydrometeorology and Monitoring Center SNCO provides initial information and an alert on a potential hazard through internal electronic communication to the Ministry of Economy, which is responsible for the agricultural sector. Upon receipt of the alert, the Ministry of Economy informs the population regarding the required preventive measures to be undertaken. Both the Hydrometeorology and Monitoring Center SNCO and the Ministry of Economy use mass media channels and messaging options to inform national, regional and local public authorities and the general public including farmers (FAO, 2022^[31]).

However, an early warning system with a systematic management and decision-making procedure, and a clear distribution of roles and responsibilities does not exist (FAO, 2022^[31]). As a result, the agriculture sector along with other climate vulnerable sectors suffer from hazard impacts that could have been prevented if a proper MHEWS was in place and operational.

⁶ The report is expected to be released in 2025.

⁷ Government Decision No. 1925-N of 3 November 2005 "On the Approval of Population Warning Order in the Event of Occurrence of Emergency Situation in the Territory of the Republic of Armenia", outlining warning procedures for emergencies; Government Decision No 346-N of 6 April 2017 "On the Approval of Regulations for State Executive and Self-governing Bodies, Organizations and the Public on Warning and Awareness in the Cases of Occurrence of Emergency Situations or such Threat in the Territory of Republic of Armenia, Armed Attack against the Republic of Armenia or Direct Threat of That, Declaration of War or in a State of Emergency".

The Government of Armenia plans to set up an early warning system for hazardous hydrometeorological phenomena, covering agriculture, according to the [2023-2026 Action Plan for the Implementation of the Agricultural Sector Strategy](#) (Government Decision No. 1222-L of 20 July 2023), the [Action Plan of Government Programme 2021-2026](#) (Government Decision No. 1902-L of 18 November 2021) and the [Disaster Risk Management Strategy for 2023-2030 and 2023-2026 Action Plan](#) (Government Decision No. 1717-L of 5 October 2022). The foreseen measure is expected to ensure an expanded network of radar observations and an effective and modern system of observation data collection. To date, the following actions have been undertaken:

- On 28 December 2023, the Public Investment Committee, chaired by the Prime Minister, approved a feasibility study on “Establishment of the System of Forecasting and Early warning of dangerous hydrometeorological phenomena”. As a result, the Government Decision No. 1064-N of 4 July 2024 allocated funds to the Hydrometeorology and Monitoring Center SNCO to further develop and implement the project (AMD 1.3 billion for 2026, and AMD 1.4 billion for 2027) (Ministry of Economy, 2024^[32]).
- In September 2023, the “Environmental Project Implementation Unit” State Agency of the Ministry of Environment submitted to the GCF a project concept note titled “[Scaling up National Adaptive Capacities for Climate Change-driven Natural Hazards through Strengthening Monitoring and Early Warning Systems](#)”. The project’s objective is to enhance the efficiency and coverage of a multi-hazard early warning system for climate change induced hazards in Armenia in view of the projected climate change impacts. The primary beneficiaries are 1 074 100 individuals engaged in agricultural activities, both farming and food processing, accounting for approximately 36% of the total population (GCF, 2023^[33]). The State Agency is in the process of preparing a project proposal based on the concept note reviewed by the GCF and expects to submit it for GCF board for approval in 2025.

4. Promotion of sustainable soil practices to preserve soil quality in view of climate change impacts

Armenia’s policy framework for protecting agricultural soil from climate change impacts includes the following:

- The [Land Code](#), adopted on 2 May 2001, defines the types of land, including the classification of agricultural land, regulates land use, outlines the responsibilities of state authorities and land users under protection norms, describes rules for the use of contaminated lands as a consequence of technological, epidemiological and other types of disasters, envisages measures for nature protection, sanitary hygienic and other requirements for drafting and exploitation of buildings and constructions, protection of agricultural and other land from micro-parasitic and quarantine pests, and from other negative phenomena, as well as the implementation of protection measures and use of natural monuments and preservation of green belts. According to Article 36 of the Land Code (Objectives and Tasks of Land Preservation), “land preservation shall be deemed as a system of environmental protection, economical, organisational, legal and other measures aimed at targeted and efficient land use, observation of restrictions on land use, prevention of unjustified exclusion of lands from agricultural activities, protection from water and wind erosion, swamping and salinisation as well as improvement of land fertility” (Government of the Republic of Armenia, 2001^[34]).

- The Law [On Melioration of Agricultural Land](#), adopted on 20 May 2005, regulates the melioration of agricultural land to ensure the maintenance and improvement of soil fertility, protection of land from salinisation and erosion, as well as the use of less fertile lands. (Government of the Republic of Armenia, 2005^[35]).

There are several government programmes which aim to improve agricultural land use and output:

- The **Agricultural Land Use Efficiency Concept and Programme of Measures**, approved by Government Decision No. 68-L of 23 January 2020, addresses, among others, the issue of abandoned land and aims to introduce mechanisms to promote the participation of land users in improving land use efficiency, promote land consolidation based on international practices, establish a register of agricultural holdings and to create digital maps of agricultural land using digitised agrochemical research (Government of the Republic of Armenia, 2020^[36]).
- As part of implementation of the **2023-2026 Action Plan for the Implementation of the Agricultural Sector Strategy** (Government Decision No. 1222-L of July 20, 2023), the [State Support Programme for the Consolidation of Agricultural Lands for 2023-2025](#) was approved by the Government Decision No. 1220-L of 4 August 2022. The goal of the programme is to consolidate and enlarge small-sized and fragmented agricultural land areas in order to: 1) promote productivity growth in the agricultural sector and contribute to reducing the cost of agricultural products; 2) promote the creation of new jobs in the agricultural sector; 3) promote the targeted use and effective management of land; 4) contribute to increasing the volume of investments in the agricultural sector; and 5) contribute to increasing competition in the agricultural sector (Government of the Republic of Armenia, 2022^[38]).
- The [Land Reform Pilot Programme](#) was approved by the Government Decision No. 1605-L of 13 October 2022. The goal of the programme was to contribute to the consolidation of lands, the development of the land sector and the increase in the level of land use through various tools (acquisition, alienation, mediation, exchange of agricultural lands). The programme was implemented through the Center for Agricultural Services SNCO of the Ministry of Economy until July 2023. The further continuation of the programme depends on the results of the programme's implementation.

While these three programmes do not focus on climate change adaptation measures and the link between land abandonment and climate change is not clear-cut, the programmes might contribute to this goal by improving information on the agricultural sector and efforts to consolidate small-sized farms, therefore enhancing their absorptive capacity to knowledge and technology.

5. Promotion of sustainable practices to preserve water in view of existing and foreseen climate change impacts

5.1 Water policy

With the Decision No. 1962-L of 3 November 2022, Armenia's government approved the [Water Sector Adaptation Plan and its Programme of Measures for 2022-2026](#). The Plan provides direction to the implementation of climate change adaptation measures in the water sector. It aims to co-ordinate the adaptation policy of the sector; to create the necessary legal, economic, technical and institutional prerequisites aimed at contributing to the reduction and management of challenges and negative impacts of climate change in the water sector, taking into account

predicted risks and impacts of climate change, reducing negative socio-economic impacts, losses and damages. The **Water Sector Adaptation Plan and its Programme of Measures for 2022-2026** includes the following measures:

- introduction of definitions required by the **EU Floods Directive** in legislation and other legal acts, and designation of an appropriate authorized body for the purpose of implementing the provisions of the directive
- implementation of regulatory and incentive mechanisms for the reuse of treated wastewater as well as mainstreaming of adaptation measures in the legislative framework of the water sector
- development of a model flood management plan
- development of a country-level drought emergency management plan

Only the first out of these four measures has been implemented through the following actions:

- The Ministry of Internal Affairs responsible for emergency situations was designated as an authorized body for flood risk prevention and management (**Law HO-317-N dated 7 July 2022**).
- Flood and flood risks related definitions were introduced (**Law HO-316-N of 7 July 2022**).

The three remaining planned measures have not yet been implemented. The Ministry of Environment is responsible for the development of a country-level drought emergency management plan, while the Ministry of Internal Affairs is responsible for the development of a flood management plan. The Ministry of Internal Affairs has developed a draft Joint Ordinance of the Ministers of Internal Affairs and Territorial Administration and Infrastructure on the “Guidelines for the Development of a Community Disaster Risk Management Plan and the Approval of a Model Plan” (to be approved in the coming weeks). The draft Ministers’ Ordinance proposes development of a disaster risk management plan for each community, which would also include separate measures related to floodplains and gullies, in particular the cleaning of floodplains, construction/reinforcement of floodplains and gullies etc. Moreover, a recently adopted Government Decision defines the requirements and content for flood hazard and risk maps (**Government Decision No. 1158-N of 25 July 2024**). The Decision requires that the maps contain information according to low, medium and high probability flood scenarios.

The main laws in the water sector are:

- the **Water Code (Law No. HO-373-N, 2002)**, which establishes water protection for the country of Armenia and highlights the permits and regulations in place to avoid pollution and promote water source quality
- the **Law On the fundamental provisions of the national water policy (Law No. HO-96-N, 2005)**, which defines the priority principle of water use and, in the process of assessment of demand for water, attributes priority to the issues of environmental protection as an integral part of an ecosystem
- the Law **On National Water Programme (Law No. HO-232-N, 2006)**, which sets out the definition and implementation of the national water programme of Armenia, covering assessments of the national water reserve, the strategic water reserve, usable water resources, supply and demand for water, and the main problems and prospects of the preservation and development of the water sector

5.2 Irrigation for agriculture

The [State Support Programme 2021-2025 on the Development of Intensive Horticulture, Introduction of Modern Technologies and Stimulation of the Production of Non-Traditional High-Quality Crops in the Republic of Armenia](#) is the government-led programme on irrigation practices. Its aims to introduce modern irrigation systems through state support, promote economical and efficient use of water resources, and mitigate the impact of climate change. Moreover, it contributes to the improvement of the level of adaptation and to the increase in the incomes of economic entities in agriculture.

As of 1 December 2024, approximately 3 260 ha of intensive horticulture had been created. The government approved the application for the establishment of approximately 1 290 additional ha of intensive horticulture. The Ministry of Economy signed contracts for the introduction of modern irrigation systems on land with a total area of about 290 ha with partial subsidy of loan interest rates and partial reimbursement of costs (Ministry of Economy of Armenia, 2025^[38]).

Several additional government plans foresee a measure on “Economical and efficient use of land resources and water resources through construction of modern irrigation systems and construction or expansion of water basins in the area of about 1 000 ha per year in 2023-2025”. This includes:

- **The Action Plan of Government Programme 2021-2026** (Government Decision No. 1902-L of 18 November 2021)
- **The 2023-2026 Action Plan for the Implementation of the Agricultural Sector Strategy** (Government Decision No. 1222-L of 20 July 2023)
- **The Food Security System Development Strategy and Action Plan for 2023-2026** (Government Decision No. 1083-L of 29 June 2023)
- **The State Support Programme for the Consolidation of Agricultural Lands for 2023-2025** (described under the previous section)

5.3 International projects

Some international institutions support the Government of Armenia in the promotion of sustainable practices to preserve water in view of existing and foreseen climate change impacts:

- The [Irrigated Agriculture Development in Ararat and Armavir marzes \(IADAAM\) project](#) (2024-2026), which is financed by the EU and implemented by the French Development Agency (AFD) (launched on 31 October 2024), focuses on modernizing irrigation infrastructure and enhancing agricultural practices to build a more sustainable and productive agriculture system. By addressing both water management and agricultural development, the project aims to support farmers and stakeholders in the Ararat and Armavir regions (Strategic Development Agency, 2024^[39]).
- The ongoing **World Food Programme (WFP) “On-farm and off-farm irrigation systems enhancement” project**: continued supporting the construction of on-farm and off-farm irrigation systems in communities vulnerable to climate change across Syunik, Vayots Dzor, and Gegharkunik provinces in 2024. Additionally, the WFP introduced a “cash-for-work” (“food-for-assets”) component, providing cash to people involved in the irrigation system construction activities. To make irrigation water available for smallholder farmers and to improve productivity through enhancing soil and water management techniques in vulnerable communities, WFP invested in construction/rehabilitation of off-

farm and on-farm drip irrigation schemes. More than 300 smallholder farmers benefited from this intervention, covering around 121 ha of orchards (WFP, 2025^[40]).

- With the framework of the Asian Development Bank’s (ADB) **Sustainable Water Use Assessment for Productivity Enhancement (ARM-SWAP) TA (2024-2026)**, the government will receive support with analysis of repurposing the groundwater used in aquacultures in Ararat valley for irrigation purposes. Currently, there are discussions with the government to define the final scope (ADB, n.d.^[41]).

6. Pest, disease and invasive species management due to climate change

The main law regulating pest, disease and invasive species management in Armenia is the [Law On Phytosanitary](#) adopted on 14 June 2014. This law regulates the implementation and management of phytosanitary situation, establishes mandatory phytosanitary requirements and the main phytosanitary principles in the process of growing, storing, transportation or marketing of plants, plant products and other regulated items, as well as responsibilities of physical and legal persons engaged in soil cultivation. The law does not include provisions with regard to the impact of climate change on plant health, which may, for instance, affect agricultural productivity through changing pressures related to food safety and plant pests (FAO, n.d.^[44]).

The **2023-2026 Action Plan for the Implementation of the Agricultural Sector Strategy (Government Decision No. 1222-L of July 20, 2023)** envisages the “Development of a rapid response system for outbreaks of the most dangerous diseases and pests” including in relation to climate change. As a result, the Ministry of Economy has prepared two legal acts:

- **On Amendments and Supplements to the Law on Phytosanitary**, which was adopted on 15 November 2024 and will enter into force on 3 June 2025
- **On Establishing a Working Group for the Purpose of Introducing a Rapid Response System for Outbreaks of the Most Dangerous Diseases and Pests and Approving Its Working Procedures** which will be circulated once the first draft law enters into force. The foreseen system will respond also to outbreaks which are caused by climate change.

The **2023-2026 Action Plan for the Implementation of the Agricultural Sector Strategy (Government Decision No. 1222-L of July 20, 2023)** also envisages full implementation of “**Preventive measures against the penetration and spread of diseases and pests in the conditions of climate change**”. The Inspection Bodies’ Co-ordination Bureau proposed to consider the State Revenue Committee as the responsible body for this measure. The Ministry of Economy presented the results of the discussion to the Prime Minister Office in January 2024 (Ministry of Economy of Armenia, 2025^[38]).

The **Food Safety Inspection Body (FSIB)**, which reports to the Prime Minister’s Office, carries out phytosanitary monitoring of fruits and berries in Armenia, including in the framework of exports (the importing country identifies which pests and diseases need to be controlled) and imports.

Armenia is a signatory of the **Agreement on the Application of Sanitary and Phytosanitary Measures** (SPS Agreement) of the World Trade Organization (WTO). In addition, Armenia’s **CEPA** with the EU includes a **chapter on Sanitary and Phytosanitary Measures** (Title VI, Chapter 4). This chapter sets out principles applicable to sanitary and phytosanitary measures in order to facilitate mutual trade while protecting life and health of humans, animals and plants. The CEPA expects implementation of sanitary and phytosanitary measures, procedures and controls. The Armenia-EU Partnership Committee in Trade, co-ordinated by the Ministry of Environment, has developed a **roadmap for Chapter 4: Sanitary and Phytosanitary Matters**

on the implementation status and developments in bilateral co-operation. This roadmap is a working document which is not available publicly (FAO, 2025^[42]).

Armenian legal framework does not recognize the concept of pest- or disease-free areas and areas of low pest or disease prevalence (regionalization), prescribed by the SPS Agreement, and consequently does not prescribe a procedure for recognizing those areas in case of a request from third countries (FAO, 2025^[42]).

7. Development, certification and use of climate resistant seeds or plant varieties

In Armenia, the law regulating climate resistant seeds and plant varieties is **Law No. 106 of 20 May 2005 On Seeds**. The law lays down the basic provisions for registration, seed production and reproduction, certification, transportation, storage, sale, and use of permitted plant varieties. Numerous secondary legislation regulates the details, with the majority dating back to 2005 or 2006.

The **2023-2026 Action Plan for the Implementation of the Agricultural Sector Strategy** (Government Decision No. 1222-L of 20 July 2023), which stipulates the promotion of the production of certified seeds, seedlings and planting material through scientific centres, registered seed producers and nurseries. It also stipulates evaluation of the possibilities of effective cultivation of crops according to agricultural zones under changing climatic conditions. This law also stipulates implementation of a complete planting material certification system, including a system for digitizing certification processes.

To implement the planting material certification system:

- The **Law On Seeds and Seedlings** was adopted on 14 September 2022 and entered into force on 5 October 2023. Article 13 of the Law (Scientific support for seed production and planting material production) stipulates development of scientifically substantiated recommendations for the introduction of new varieties or hybrids and their cultivation in different climatic zones and soil-climatic conditions of Armenia (Government of the Republic of Armenia, 2022^[47]). The law includes a separate clause on control during all stages of circulation of seeds and planting materials. Pursuant to that, Armenia passed laws making additions and amendments to its Code on Administrative Violations and its Law on Organizing and Carrying Out Inspections.
- Following the enactment of this law, 13 by-laws were adopted. **The Government Decision No. 1124-N of 18 July 2024 On renaming the State Non-Profit Organization “Seed Agency” to the “State Non-Profit Organization Center for Agricultural Research and Certification”** assigned the function of certifying seedling/planting material to the Center for Agricultural Research and Certification SNCO of the Ministry of Economy.

The **State Standardisation Programme for 2024** was approved by the Government Decision No. 482-L of 4 April 2024. In the field of agriculture, it is planned to develop a national standard defining the acceptance, physicochemical indicators, packaging and labelling requirements, storage and transportation conditions of planting materials of local varieties of apricot and raspberry. The Programme is approved every year.

A **national standard on Apricot Seedling** was approved on 27 August 2024. It aims at ensuring implementation of the provisions of the **Law On Seeds and Seedlings**, including establishing the conditions for the production of planting material, as well as its characteristics, storage and transportation, for use in seedling certification activities.

A national standard on [Raspberry and Blackberry Seedling](#) was approved on 16 December 2024 for the same purpose.

In 2024, the **Scientific Center of Vegetable, Melon and Industrial Crops SNCO** of the Ministry of Economy presented 16 varieties of locally produced, drought-resistant and heat-resistant vegetable crops adapted to changing climatic conditions for distribution in different climatic zones of Armenia. It is testing 20 or more imported varieties (Ministry of Economy of Armenia, 2025^[38]).

8. Extension and advisory services

The Ministry of Economy has a specialised unit for the agricultural extension services – the Department of Agricultural Extension, Innovation and Monitoring (Extension Department), which operates through its 10 divisions, one per region ('marz'). The **Charter of the Extension Department**, which is approved by the Ministry of Economy Order No. 476 of 1 February 2019, is the only legal act regulating the existing advisory system in Armenia.

The **2023-2026 Action Plan for the Implementation of the Agricultural Sector Strategy** (Government Decision No. 1222-L of July 20, 2023) aims to strengthen the professional capacity of farms and raise awareness about resource-conserving agriculture.

In 2024, the **National Agrarian University of Armenia** carried out a number of advisory activities on the deployment of innovative technologies such as:

- a study of a drip irrigation regime and technologies of agricultural crops, with funding from the State Committee for Science; it has carried out consulting work on the results of the study
- consulting on the assessment of soil moisture and its potential for various crops under different climatic conditions, watering and irrigation norms, the impact of the optimal water consumption regime, crop yields and soil conditions
- consulting work on the introduction of drip and sprinkler irrigation technologies in farms in Kotayk, Armavir, Ararat and Vayots Dzor marzes
- advisory training to the employees of "Melioration" CJSC (an agency engaged in irrigation water supply under the Ministry of Territorial Administration and Infrastructure) on the latest technologies, in particular, on the organization of a groundwater basin, water metering works, and on the latest technologies for conducting soil and water analyses

However, Armenia does not offer enough education and extension services to farmers and food processing companies on climate change issues and technologies. In 2022, an institutional reorganisation took place, during which a network of regional departments providing these services was removed and centralised into the Extension Department of the Ministry of Economy. As of September 2024, the department had only three employees. It provides education and extension services in-person in Yerevan or over the phone. Consultations in the regions are extremely limited, but do take place rarely, during visits lasting 2-3 hours. Consultations mostly focus on state subsidy and support programmes in agriculture. The department involves specialised experts from other ministry departments, scientific centres and agrarian universities.

Authorities of the regions and some large communities have agricultural and environmental specialists and do some training and education activities as well. However, it seems that the content of such training is limited (e.g. viticulture). Otherwise, it seems that food processing companies are an important source of information to other farmers.

9. Innovation for climate change adaptation

Innovation policy measures for agriculture exist in various state support programmes, but there is no systemic approach to promote it.

Armenia's **Agricultural Sector Strategy** (Government Decision No. 1222-L of December 19, 2019) highlights the importance of promoting innovative solutions in the agricultural sector. However, sectoral policies and regulations do not address technological innovation for climate change adaptation in agriculture in a targeted manner.

The **National Agrarian University of Armenia** is undertaking a number of measures to promote the deployment of innovative technologies in agriculture. It has two experimental farms where it tests leading technologies and a drone training laboratory established through EU-funded Green Agriculture Initiative in Armenia (EU-GAIA) project (co-funded by the Austrian Development Co-operation). It implemented measures in farms of the Syunik and Armavir regions to combat grain diseases and pests together with foliar nutrition of crops.

Additional topics of relevance to the EU Green Deal

1. Environmental certification

There is no policy framework for certifying adherence of Armenia's horticultural products with environmental standards. However, the government-led [State Support Programme 2021-2025 on the Development of Intensive Horticulture, Introduction of Modern Technologies and Stimulation of the Production of Non-Traditional High-Quality Crops in the Republic of Armenia](#) requires a document (certificate) certifying the origin and quality of planting material (in the case of pistachios, planting material or seed) purchased from abroad or produced locally (after the introduction of the planting material certification system in Armenia).

In 2025, the government adopted a Decision on **Support Programme for Obtaining Quality and Safety Management Systems and Product Conformity Certificates** with the aim to increase the quality of products of Armenian companies through the implementation of the latest quality management systems in the production processes of businesses, including in the scope of "Global G.A.P.", "organic" and "transition period organic" certificates. The program proposes to partially compensate the costs for businesses (Unified Website for Publication of Legal Acts, 2025^[48]).

Several certification schemes operate in Armenia, including:

- **EcoCert** has recently begun activity in Armenia but does not yet have an office. It provides certification of environmentally friendly and socially conscious practices.
- **EcoGlobe LLC** provides certification of organic agriculture and food production. It has international accreditation and carries out organic certification in the areas of soil, plant and animal products, as well as collection of wild fruits, beekeeping, wine, and other products for domestic and international markets, including the EU.

2. Sustainable use of pesticides and mineral fertilisers

2.1 Pesticides

Armenia's Law No. 140 of 21 June 2014 [On Phytosanitary](#) has the following provisions on pesticides:

- requirements and criteria for state registration, re-registration and deregistration of pesticides
- requirements for pesticides and agrochemicals produced in Armenia and imported into Armenia
- toxicological and hygienic evaluation of pesticides and agrochemicals
- requirements for packaging and labelling of pesticides and agrochemicals.

The Amendments and Supplements to the Law on Phytosanitary were adopted on 15 November 2024 and will enter into force on 3 June 2025 **to allow imports of pesticides and agrochemicals from certain developed countries without additional laboratory checks.** These changes are based on the fact that developed countries already have high requirements for the quality of pesticides and agrochemicals, so there is no need to conduct additional inspections when importing them to Armenia (Arka News Agency, 2024^[45]).

The Phytosanitary Law is complemented by a series of secondary legal acts on pesticides. However, neither the Phytosanitary Law nor the secondary legal acts provide specific regulations on the sustainable use of pesticides after their state registration (FAO, 2025^[42]).

The Ministry of Environment drafted the Law [On Chemical Substances](#) in 2022 to regulate the production, marketing, import, export, use, classification, marking, labelling and packaging of chemical substances and mixtures, the establishment and maintenance of a register of chemical substances, the submission of reports on chemical products, the authorization of hazardous chemical substances, the submission of reports on obligations, and the control of the use of chemical substances and mixtures.

Chemical substances are classified under one of the following categories:

- pesticides, including highly hazardous pesticides
- industrial chemicals

The draft law aims to regulate the following subcategories of pesticides:

- pesticides used as plant protection products
- biocidal products
- products intended for use as disinfectants, insecticides and rodenticides

Exporters and importers of chemicals must comply with the procedure for the import and export of hazardous chemicals, based on the Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade.

Within **Measure No. 111 of the [CEPA Implementation Roadmap](#)** approved by the **Prime Minister Decision No. 666-L of 1 June 2019**, the approximation of **Regulation (EU) No. 649/2012 of the European Parliament and of the Council of 4 July 2012** concerning the export and import of hazardous chemicals is planned to be carried out in the scope of the **Law of the On Chemical Substances**. The objectives of the EU Regulation are to implement the Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade as well as promote shared responsibility and co-operative efforts in the international movement of hazardous chemicals in order to protect human health and the environment from potential harm.

The [Action Plan of Government Programme 2021-2026 \(Government Decision No. 1902-L of 18 November 2021\)](#) envisages the creation of a register of chemical substances and mixtures in the Republic of Armenia and approval of the Government Decision **On Establishing the**

Procedure for the Export and Import of Hazardous Chemicals. The latter aims to regulate processes of export and import of chemical substances, establish additional requirements to protect human health and the environment, and ensure the registration of information on chemical substances.

The Government approved **Decision No. 550-L of 15 April 2021 [On Recognizing the Competent Body for Forming and Maintaining a Register of Chemical Substances and Mixtures in the Republic of Armenia](#)**. According to this decision, the Ministry of Environment has been authorized as the entity responsible for establishing and maintaining a register of chemical substances and mixtures in Armenia.

The FSIB monitors the use of pesticides, nitrates, heavy metals, genetically modified organisms (GMOs), etc. The FSIB has an in-house laboratory, regional inspectors (only two per region) and border inspectors. Monitoring of residual effects has restarted this year although it did not take place during the last 3-4 years. Inspections of raspberries and apricots have not been carried out.

2.2 Fertilisers

The **Government Decision No. 897-N of 1 June 20 2023 [On Defining Technical Safety Rules for the Storage and Safe Use of Mineral Fertilizers](#)** establishes technical safety requirements for the storage and safe use of mineral fertilisers (excluding organic fertilisers) in order to protect human life and health, the environment and property, preventing actions that mislead consumers regarding their purpose and safety. In relation to agriculture, the processing, storage, and transportation of mineral fertilisers must be carried out in such a way that prevents hazardous and toxic substances in soil, air and water resources, and agricultural products.

The “**Scientific Center for Vegetables and Technical Crops**” CJSC of the Ministry of Economy is testing new, locally produced organic fertilisers. This initiative aims to address the depletion of agricultural land. Armenian farmers have been primarily using nitrogen fertilisers for many years, resulting in an excess of nitrogen compounds in the soil (Arka News Agency, 2024^[46]).

3. Organic production

Armenia’s law No. 23 of 8 April 2008 **[On Organic Agriculture](#)** sets out the basic rules of organic farming. It establishes the main principles for organic agriculture, the powers of the government and the authorized body for making and implementing integrated public policy in the field of organic agriculture, the basics for certification, the list of the main requirements for organic agriculture, basic rules for labelling, import and export, as well as briefly states the main direction of state aid in organic agriculture. The law defines “organic agriculture” as a special type of agricultural activity that is generally in harmony with agro-ecosystems and is implemented in compliance with the requirements of relevant technical regulations and other normative documents. Particularly, the Organic Agriculture Law states that the main principles of organic agriculture are the following:

- formation of a favourable environment for the preservation of biodiversity as a result of selective breeding of plants and livestock, as well as reduction of risks caused by human activity
- improvement of the soil’s physical, chemical and biological qualities, and the maintenance of fertility by natural means (crop rotation, organic fertilization, creation of forested zones to combat erosion)

- selection of methods and technologies of agricultural foodstuff processing that will ensure maximum preservation of their biological value
- elimination of environmental pollution – terminating the use of synthesized chemical substances, using environmentally friendly technology in agricultural activities
- harmonization of crop production and animal husbandry
- elimination of the use of hormones, hormonal medications, as well as genetically modified living organisms, genetic engineering, or other modern biotechnologies and ionic x-ray methods

The law does not address at all the control systems of organic or in-conversion products. In practice, the control might be regulated by the general **Law No. 143 of 21 June 2014 On State Control of Food Safety**, however, this latter law does not prescribe any specific regulations for products deriving from organic agriculture (FAO, 2025^[42]). The Ministry of Economy plans to amend the Law “On Organic Agriculture” and the by-laws in 2025 to introduce clauses on accreditation of organizations carrying out inspection and certification.

The [Government Decision No. 704 of 26 June 2009 On Approving the Procedure for Issuing a Certificate of Compliance in the Field of Organic Agriculture and Forms of the Organic Agricultural Product Compliance Mark and Certificate of Compliance](#) establishes that economic entities engaged in organic agriculture must submit an application to the certification body for receiving the certificate. However, Armenia’s legislation on organic certification do not make it clear who is the certification subject: the primary producer (farmer), the processor, the distributor or all of the aforementioned persons.

The **2023-2026 Action Plan for the Implementation of the Agricultural Sector Strategy (Government Decision No. 1222-L of 20 July 2023)** envisages support for the development of organic agriculture in Armenia, specifically:

- Amendment of the Law “On Organic Agriculture” and the by-laws in 2025 to introduce clauses on accreditation of organizations carrying out inspection and certification, with the intention to facilitate the development of organic (FAO, 2025^[42]).
- The “Scientific Center for Vegetables and Technical Crops” closed joint-stock company (CJSC) of the Ministry of Economy is testing new, locally produced organic fertilisers to potentially authorise their production based on the results (Ministry of Economy, 2024^[32]).
- Ongoing implementation of the project “Testing and Evaluation of the Effectiveness of Application of Siderat Plants and Biological Fertilizers to Promote Green Agriculture in Armenia” with the support of the Committee for Higher Education and Science of the Ministry of Education, Science, Culture and Sports (Ministry of Economy of Armenia, 2025^[38]).

[EcoGlobe LLC](#), an entity for certification of organic agriculture and food production, is operational. It has international accreditation and carries out organic certification for plant and animal products, as well as wild fruits, beekeeping, wine, and other products, for both the Armenian and international markets (EcoGlobe, n.d.^[43]).

CEPA Implementation Roadmap

The **CEPA Implementation Roadmap** was approved by the [Prime Minister Decision No. 666-L of 1 June 2019](#). It was updated by the Prime Minister **Decision No. 587-L of 1 June 2021**. Bodies established under the CEPA support the bilateral co-operation in the framework of the

CEPA. Pursuant to CEPA Article 363, the **Armenia-European Union Partnership Committee ('Partnership Committee')** has been established (co-ordinated by Armenia's Ministry of Foreign Affairs). The CEPA Implementation Roadmap will be updated in 2025-2026.

However, the CEPA Roadmap is fragmented and does not cover the CEPA in its entirety. Particularly, it **does not cover the sphere of agriculture and rural development** including article 70 and 71. The only exception is the issue considered in the Article 71(b) which is covered in Annex 1 of the roadmap: (b) enhancing the administrative capacities at central and local level in the planning, evaluation and implementation of policies in accordance with the legislation of the EU and best practices. This measure has been implemented.

The EcoLur information NGO analysed implementation of the roadmap and organized a roundtable "Towards an Update of the CEPA Roadmap" to discuss the results on climate action on 13 September 2024. Participants included representatives of the office of the Deputy Prime Minister of Armenia Mher Grigoryan, responsible state institutions and organisations, representatives of the civil society and the UNDP Climate Programme (EcoLur, 2024^[52]). The Non-governmental Organisation (NGO) stated that several climate related measures of the roadmap relevant for the agricultural sector climate adaptation have been implemented.

Regarding the measures relevant for the agricultural sector climate adaptation, some have been partially adopted, notably:

- No. 123 (Establishment of a Measurement, Reporting and Verification (MRV) system, development and consistent strengthening of the process of developing and technology transfer aimed at addressing climate change issues):
 - Guidelines for the classification of climate change mitigation and adaptation actions by sectors (including agriculture) have been prepared.
 - The UNDP is supporting the Ministry of Environment with the preparation of guidelines and templates for data collection, monitoring, evaluation of adaptation policies and measures within the CBIT project.
- No. 130 (Development of a climate change adaptation concept and national action plan aimed at planning and implementing activities in line with the requirements and measures for mitigation, reduction and prevention of climate change in agricultural, economic and other sectors that may have potential impact on climate):
 - The **NAP of the Republic of Armenia** was approved by the Government Decision No. 749-L of 13 May 2021. The NAP includes agriculture as one of the priority sectors for climate change adaptation in Armenia.
 - A sectoral adaptation plan for agriculture has been developed and incorporated into the respective sectoral strategy and action plan, namely the **2023-2026 Action Plan for the Implementation of the Agricultural Sector Strategy** approved by the Government Decision No. 1222-L of 20 July 2023.

Details on relevant provisions of the CEPA for Armenia's agricultural sector and its climate change adaptation and resilience are available in Annex A.

Institutional set-up for designing and implementing the climate change adaptation policy for agriculture in Armenia

The governance and management of climate change issues and projects in Armenia is co-ordinated across multiple agencies and sectors (World Bank, n.d.^[53]). The main government institutions co-operating on climate change adaptation in agriculture are:

- The **Ministry of Environment** is the leading ministry on overall climate change adaptation policy in Armenia. Its Department of International Co-operation has a leading role in implementation of international agreements and co-operation with other ministries, including on climate change. The **Hydrometeorology and Monitoring Center State SNCO** of the Ministry of Environment is responsible for environmental monitoring.
- The **Ministry of Economy** oversees the agricultural sector after the dissolution of the Ministry of Agriculture and has a Department on Agricultural Programmes. While programmes of the ministry have an adaptation angle, it lacks in-house capacity to deal with climate change adaptation issues and prioritises agricultural matters.
- The **Inter-agency Co-ordination Council for the Implementation of the Requirements and Provisions of the UNFCCC and Paris Agreement** discusses the adaptation policy matters and actions in Armenia. It was established in 2012 and upgraded in 2021. The purpose of the Council is to ensure the fulfilment of Armenia's obligations under the UNFCCC and the Paris Agreement, including co-ordination and monitoring of implementation of NDC, the **LT-LED Strategy** and the **NAP**, and implementation of the 13th Goal of the United Nations 2030 Agenda for Sustainable Development (Climate Action). The Council is comprised of the Chairperson (with the raised political level of the Council's chairmanship, the Deputy Prime Minister serves as the Chairperson), the Deputy Chairperson, the members of the Council (13 state ministries and agencies), 3 permanent Working Groups and the Secretariat (ensured by the Ministry of Environment, which manages the NDC Partner Support Co-ordination Plan).
- The **Ministry of Internal Affairs** provides the Ministry of Environment data on physical damage due to natural disasters. It took over this role from the Ministry of Emergency Situations.

Overall, Armenia needs institutional capacity for designing and implementing effective policy frameworks for climate change adaptation and resilience in the agricultural sector. The dissolution of the Ministry of Agriculture has created a lack of institutional capacity and the decentralisation or cutting of many services for agricultural farmers and producers. International organisations carry out a significant amount of work with a lack of domestic capacity to absorb the knowledge and sustain the work after the projects end.

3 European Green Deal provisions and environmental standards

Relevant European Green Deal provisions

The **European Green Deal** is a package of policy initiatives that support the EU on the path to a green transition, with the ultimate goal of reaching climate neutrality by 2050. The Green Deal underlines the need for all policy areas to contribute to fighting climate change. It supports measures across economic sectors covering energy, transport, industry, agriculture, sustainable finance and more (European Council, 2025^[54]). The European Green Deal is an integral part of the European Commission's strategy to implement the United Nation's 2030 Agenda and the Sustainable Development Goals (European Commission, 2019^[55]).

The European Green Deal notes that food production still results in air, water and soil pollution, contributes to the loss of biodiversity and climate change, and consumes excessive amounts of natural resources, while an important part of food is wasted (European Council, 2025^[54]).

The Farm to Fork Strategy is a pillar of the European Green Deal which aims to make food systems more fair, healthy and environmentally friendly (European Commission, n.d.^[56]). This strategy aims to reward farmers, fishers and other operators in the food chain who have already undergone the transition to sustainable practices, enable the transition for the others, and create additional opportunities for their businesses (European Commission, 2020^[57]). It states that farmers, fishers and aquaculture producers need to transform their production methods more quickly, and make the best use of nature-based, technological, digital, and space-based solutions to deliver better climate and environmental results, increase climate resilience, and reduce and optimise the use of inputs (e.g. pesticides, fertilisers).

Relevant provisions of the EU Green Deal and the Farm to Fork Strategy

The key provisions of the EU Green Deal and the Farm to Fork Strategy with relevance for the horticultural sector include⁸:

- **Sustainable practices in national strategic plans under the Common Agricultural Policy:** National strategic plans should lead to the use of sustainable practices such as precision agriculture, organic farming, agro-ecology, and agro-forestry. They will need to

⁸ The PROGRESS project prioritises adaptation and resilience policy rather than mitigation policy. It does not focus on influence on consumer behaviour, carbon sequestration, bio-energy, and energy efficiency. Investments are part of Output IV of the PROGRESS projects on green finance. The list includes some items that are not within the project scope but of importance to the horticultural sector overall.

reflect an increased level of ambition to reduce significantly the use and risk of chemical pesticides, as well as the use of fertilisers and antibiotics.

- **Tackle climate change.**
- **Reduced use of pesticides, fertilisers and antibiotics:** Strategic plans will reflect an increased level of ambition to reduce significantly the use and risk of chemical pesticides, as well as the use of fertilisers and antibiotics.
 - Measures to **reduce chemical pesticide risks** which contribute to soil, water and air pollution, and biodiversity loss include:
 - integrated pest management and safe alternative ways to protect the harvest from pests and diseases other than chemical pesticides (e.g. crop rotation, mechanical weeding)
 - biological pesticides
 - better environmental risk assessment of pesticides
 - improved data on pesticides
 - a faster pesticide authorisation process.
 - **Reduction in the use of fertilisers** by:
 - implementing and enforcing relevant environmental and climate legislation
 - applying balanced fertilisation and sustainable nutrient management
 - managing nitrogen and phosphorus better throughout the lifecycle
 - precise fertilisation techniques and sustainable agricultural practices.
- **Organic farming:** The area under organic farming will need to increase. It will be promoted through actions such as stimulation of supply and demand, promotion campaigns and green public procurement.
- **Protection against pests and diseases:** The EU needs to develop innovative ways to protect harvests from pests and diseases.
- **Seed security and diversity:** Farmers need to have access to a range of quality seeds for plant varieties adapted to the pressures of climate change. There is a need for registration of seed varieties, including for organic farming and easier market access for traditional and locally-adapted varieties.
- **Research and innovation:** Research and innovation is a key driver for accelerating the transition to sustainable, healthy and inclusive food systems from primary production to consumption. There is a need to consider the potential role of new innovative techniques to improve the sustainability of the food system, while ensuring that it is safe. Innovative techniques, including biotechnology and the development of bio-based products, may play a role in increasing sustainability.
- **Reduction of food loss and waste:** Measures to reduce food loss and waste include legally binding targets, quantification of food waste levels, investigation and prevention of food losses at the production stage, and appropriate date marketing (use by and best before dates) etc.
- **Carbon sequestration** by farmers, which should be rewarded.

- **Circular bio-based economy** e.g. bio-refineries that produce bio-fertilisers, protein feed, bioenergy, bio-chemicals.
- **Renewable energy:** Biogas production from the food and beverage industry, solar panels etc.
- **Stimulating sustainable food processing, wholesale, retail, hospitality and food services practices:**
 - **energy efficiency**, to reduce the environmental footprint and energy consumption
 - **reducing packaging**
 - **improvement of the corporate governance framework**, including a requirement for the food industry to integrate sustainability into corporate strategies
 - **circular business models in food processing and retail**, including specifically for Small and Medium-sized Enterprises (SMEs); e.g. making use of food waste
 - **food packaging:** reduction of food contact materials legislation to improve food safety and public health (in particular, in reducing the use of hazardous chemicals), use of innovative and sustainable packaging solutions using environmentally friendly, re-usable and recyclable materials; food waste reduction such as reusable packaging etc.
 - **revision of marketing standards** to provide for the uptake and supply of sustainable agricultural products
 - **creation of shorter supply chains through** a reduction of dependence on long-haul transportation.
- Protecting land, soil, water, air, plant and animal health and welfare, and reversal of **biodiversity** loss.
- **Enforcement of legislation**, including on pesticide use and environmental protection.
- **Certification and labelling** of sustainability performance of food products and **targeted incentives**.
- **Access to fast broadband internet:** This will enable precision farming and the use of Artificial Intelligence (AI), leading to better soil management and water quality as well as a reduction in the use of fertilisers, pesticides and GHG emissions.
- **Advisory services:** there is a need for objective, tailored advisory services for all actors in the food system.
- **Investments** are key to encourage innovation and create sustainable food systems⁹.
- **Targeted support for SMEs:** Specific tailored solutions are required for SME food processors and small retail and food service operators, to help them develop new skills and business models while avoiding administrative and cost burdens.

Importantly, the EU aims to support the global transition to sustainable agri-food systems, including through **international co-operation** and **trade** policy. The EU will seek to ensure that all EU bilateral trade agreements have a robust sustainability chapter. The EU's trade policy will

⁹ Falls under PROGRESS Output IV.

seek to obtain ambitious commitments from third countries in areas such as the use of pesticides and antimicrobial resistance (European Commission, n.d.^[56]).

Relevant provisions of the EU Adaptation Strategy

The new **EU Adaptation Strategy** is part of the European Green Deal. It states that its adaptation action will be implemented in an integrated manner with the other European Green Deal initiatives, including the Farm to Fork Strategy, the Soil Strategy, the Circular Economy and Zero Pollution Action Plans, and the Biodiversity Strategy (European Commission, 2021^[58]). The key relevant provisions include:

- The importance of the **private and the public sector to work more closely together**, especially on financing adaptation.
- Adaptation **awareness and planning** would be spread to every single local authority, company and household.
- There is a need to **expand adaptation knowledge**, and acquire more and better climate-related data, especially on economic losses. Dialogue between policy makers and scientists needs to be promoted, and improvements in modelling are needed.
- The **digital transformation** is critical to achieving Green Deal objectives: The use of latest technologies and climate services to underpin decision-making must be promoted (for example, remote sensing, smart weather conditions, artificial intelligence and high performance computing).
- **Climate resilience considerations must be mainstreamed in all relevant policy fields** applicable to public and private sectors, to support the development and adaptation strategies and plans at all levels of government. **Adaptation strategies at all levels must be effective and based on the latest science.**
- **Monitoring, reporting and evaluation are essential** to setting a robust baseline against which to measure progress on adaptation.
- **Achieving resilience in a just and fair way is essential** so that the benefits of climate adaptation are widely and equitably shared. Adaptation measures need to consider the needs of men and women, older people, persons with disabilities, displaced persons, or socially marginalized groups. Support is needed for education, training and reskilling initiatives that lead to green jobs.
- **Budgetary planning, governance and institutional arrangements need to reflect disaster risk management** (including processes and tools to address ex-ante climate related risks and reducing ex-post disaster consequences).
- **Implementing nature-based solutions on a larger scale** would increase climate resilience and contribute to multiple Green Deal objectives. For example, **promoting and sustainably managing forests and farmland** will help adapt to climate change in a cost-effective way. It is vital to better quantify their benefits and to better communicate them to decision-makers and practitioners at all levels to improve take-up.
- To accelerate adaptation action, **implementation requires resources** that are commensurate with the challenge.
- **Solutions are urgently needed to help farmers and land managers** tackle climate risks. **Supply of suitable high-quality plant reproductive material** to support adaptation in agriculture, forestry and land ecosystem management should be facilitated

and broadened. More work is needed to encourage **collaborative, transnational production and transfer of seeds and planting material**.

- **Climate resilience decision support systems and technical advice** must become more accessible and rapid to foster their take-up. Such solutions would have to work on a timescale and with resources available for the financial sector, SMEs or small farmers.
- Climate adaptation action must better leverage synergies with broader work on **disaster risk prevention and reduction**.
- Ensuring that **freshwater is available** in a sustainable manner is fundamental for climate resilience. A wider use of **drought management plans**, measures to **increase the water retention capacity of soil and safe water reuse** should be promoted. In agriculture, a **knowledge-based approach**, as well as both **high tech and nature-based solutions** are necessary to ensure a sustainable use of water. Member States can support **precision farming** via national Common Agricultural Policy Strategic Plans. Member States must also ensure that **water is priced correctly**, in line with the Water Framework Directive, so that consumers are not misled about the real cost of food.
- A **stable and secure supply of drinking water is of highest importance** and it must be guaranteed. It is **important to include climate impacts** in the risk analyses of (drinking) water management plans, develop water-monitoring technologies, and ensure minimum river flow. Similarly, **it is important to maximize the capacity of soils to purify water** and reduce pollution.

EU environmental standards for fruit and vegetable imports

Imported food that does not comply with relevant EU environmental standards is not allowed on EU markets (European Commission, n.d.^[56]). EU market requirements include mandatory requirements set in European regulations and non-mandatory private regulations set by buyers (certifications) (CBI, 2023^[59]).

Mandatory requirements

Mandatory requirements apply to food safety and quality, including:

- **Limited use of pesticides** according to a regularly updated list of Maximum Residue Levels (MRLs) of pesticides. Some EU Member States apply stricter rules to pesticide levels than is required by European legislation, including supermarket chains in the Netherlands, Austria and Germany (CBI, 2023^[59]). The [EU pesticide database](#) provides information on relevant MRLs for specific products.
- **Limits on contaminants** (substances that are not added to food on purpose but appear from various sources such as agricultural practices, pollution, packaging, transport and holding or occur naturally as “inherent plant toxins”) such as chemicals (e.g. heavy metals, nitrate and perchlorate). Rules for raw and processed fruits and vegetables may vary (CBI, 2023^[59]).
- **A HACCP Plan** to supply pre-cut fresh fruits and vegetables, to **control microbiological hazards** (viruses, parasites and bacteria) through the processing and packaging process. The buyer must be informed if there is a power cut during storage (CBI, 2023^[59]).
- **A phytosanitary certificate** for most fruits and vegetables, guaranteeing that the products are free from quarantine pests and other pests. This certificate is usually issued

by the exporting country's plant protection authorities (CBI, 2023^[59]). The EU phytosanitary requirements are in line with the WTO and other international rules (European Commission, n.d.^[60]).

- **General marketing standards (GMS)** for quality and maturity (CBI, 2023^[59]). The OECD Fruit and Vegetables Scheme has developed 31 explanatory brochures on the marketing standards (e.g. the one on apricots is available [here](#)). The United Nations Economic Commission for Europe also has explanatory brochures. It is better to aim even higher than the GMS to overcome the competition. The FAO publishes additional marketing standards for fruits and vegetables.
- **Traceability** of products according to the General Food Law Regulation, with the **proof of origin** document required for all fruits and vegetables (CBI, 2023^[59]).
- **Labelling and packaging**
 - **Labelling** must adhere to EU legislation on food labelling. There are rules on labelling cartons of fresh fruits and vegetables as well as those that are processed or directly packed for consumption (CBI, 2023^[59]). Stricter regulations on the **use of plastic in packaging** are expected.
 - **Packaging requirements** aim to protect the environment and prevent risk to the health of consumers. Packaging must protect the product against contamination, leakage or dehydration (CBI, 2023^[59]).

It is important to keep abreast of EU regulations which are regularly updated. Products are submitted to compulsory tests at an entry point, which can include a check of phytosanitary certificates/documents; physical checks to ensure that they are free from harmful organisms; identity checks to ensure that they correspond to certification; and inspections to check for harmful organisms (CBI, 2023^[59]).

Non-mandatory certifications

The main **non-mandatory certifications** include:

- [Global Agricultural Practices \(Global G.A.P.\)](#) is a private, voluntary certification used by most buyers of fresh fruits and vegetables in the EU, especially in northern Europe and in supermarkets. Global G.A.P. includes standards on sustainable production practices and environmental protection, including crop management, as well as worker health and safety (CBI, 2023^[59]).
- [International Food and Safety Standard \(IFS\)](#) is a food safety management system dedicated to food safety and quality. Developed by Germany and France, it is widely recognized by food manufacturers and retailers in Europe (CBI, 2023^[59]).
- [British Retail Consortium Global Standards \(BRCGS\)](#) include a Retail and Safety Certification for companies in the food retail supply chain. The standard helps companies and their customers meet legislative requirements for food and product safety. BRCGS are used in the United Kingdom, but are also common in mainland Europe (CBI, 2023^[59]).
- The [Rainforest Alliance Certification](#) applies to some fruits, including apricots and raspberries. The standard has detailed criteria for environmental, social and economic sustainability. It is used in large retail chains in northwestern Europe (CBI, 2023^[59]).
- [Fairtrade Standards](#) incorporate social, economic and environmental criteria. They cover fresh fruits including apricots and raspberries. These standards apply to the realities of

farmer co-operatives, workers at large farms or factories, artisanal miners, as well as traders and companies who buy and sell Fairtrade products. These standards are not at the top of the list for buyers because of complex requirements and high costs (CBI, 2023^[59]).

- **Organic certification** is applied throughout the EU, with all European countries having their own national organic labels (CBI, 2023^[59]).
- [ISO 14001](#) for Environmental Management is an internationally recognised standard that provides a framework for organisations to design and implement an Environmental Management System (EMS). An EMS would help organisations ensure that they take steps to minimize their environmental impact, comply with legal requirements and achieve environmental objectives. It comprises many aspects, including the use of resources, waste management, monitoring of environmental performance, and involvement of stakeholders in environmental commitments (ISO, 2023^[61]).
- [Safe Quality Food \(SQF\)](#) provides an independent and external verification that a product, process and service complies with international, regulatory and other standards that enable a food producer to show that food has been produced, prepared and handled according to the highest possible standards. SQF certified sites span more than 40 countries (SQF, n.d.^[62]).
- [FSSC 22000](#) provides a certification for the food manufacturing industry and the related supply chain to ensure food safety standards and processes.

Some multinational buyers in Western Europe have their **own compliance programmes**, such as [Unilever's Sustainable Agriculture Code](#) that applies to all Unilever suppliers of agricultural goods, farmers that produce these goods and contractors working on the farm.

4 Conclusions and initial policy gaps

Armenia's agricultural sector is highly vulnerable to negative climate change impacts, including a more frequent occurrence of natural disasters such as droughts, early frosts, forest fires and floods, more intense hailstorms with larger hail size; land degradation and desertification (with 80% of the country's territory at risk) and loss of biodiversity. The agricultural sector accounts for 70% of the country's water consumption, which highlights the urgency of water preservation measures. The largest future damage is expected from natural disasters, especially hail, frosts, heatwaves and floods.

The agricultural sector is an important contributor to the country's GDP, employment and exports. Horticulture accounted for almost half of the country's gross monetary agricultural output in 2024, while the food processing industry is also well-developed. However, agriculture faces several challenges that hamper its competitiveness such as limited access to modern production and management practices, poor rural infrastructure and labour constraints. Approximately half of Armenia's arable land is used improperly or ineffectively. The predominantly small size of farms leads to knowledge gaps and low capacity to meet international standards, while agricultural co-operatives are ineffective, which limits their access to knowledge, technologies and markets. Vegetable and fruit producers also suffer from low efficiency of land and water resources and intensive use of fertilisers.

The CEPA of Armenia is a driving force for legal reform, and some of its provisions have been implemented. However, much remains to be done. The current governmental Implementation Roadmap does not reflect the agricultural measures except for one exception, and the government plans to update it during 2025-26. Armenia's recent law initiating Armenia's EU accession further increases the need to align with the EU legislation.

Below is a summary of the main findings of the stocktaking report regarding the policy frameworks for climate change adaptation and resilience in Armenia and the EU Green Deal, and identified initial policy gaps:

Climate change adaptation plans

- Armenia's **National Adaptation Plan (NAP)**, adopted in 2021, aims to mainstream adaptation measures across the country's sectors and regions. A sectorial adaptation plan for agriculture is part of the 2023-26 **Action Plan for the Implementation of the Agricultural Sector Strategy**. In addition, several regional (marz) adaptation plans have been developed and include climate adaptation measures. The Ministry of Environment will analyse the NAP's implementation in 2025, and will develop a National Action Programme of Adaptation to Climate Change for the years 2026-30. The Ministry of Environment is developing a Climate Law with the technical assistance of the UNDP. An Inter-Agency Co-ordination Council for the Implementation of the Requirements and Provisions of the UNFCCC and the Paris Agreement monitors NAP implementation.
- **The NAP to a large extent follows the European Commission's guidelines by setting a clear objective of including an ecosystem-based approach and a**

multi-hazard approach; and proposing a clear governance structure. It also includes implementation principles that cover social and gender issues.

- **The Ministry of Economy and the Ministry of Environment require more institutional capacity to implement the NAP and monitor its progress** in terms of human and financial resources; they also need to develop **indicators for tracking implementation** of the NAP.

Monitoring and forecasting of climate change impact in agriculture

- The Hydrometeorology and Monitoring Center SNCO provides hydrometeorological information for the agricultural sector, guided by the 2001 **Law on Hydrometeorological Activities**. One of its responsibilities is agrometeorological information, and it has recently launched a dedicated website and an application for this purpose. The center is preparing Armenia's Fifth National Communication (NC5), which will include climate change scenarios and sectoral vulnerability assessments.
- While the government has been modernising its environmental monitoring network and receiving international support in this area, it needs to further modernise and improve it, including by **ensuring that all high-risk areas have monitoring stations**.
- The Hydrometeorology and Monitoring Center SNCO will benefit from better **technical and human capacity** to deliver its services, including for providing information on hailstorms and frosts.
- It is also suggested to **improve environmental data and climate forecasting, assessment and modelling**.

Early Warning Systems

- The **Hydrometeorology and Monitoring Center SNCO** of the Ministry of Environment provides an initial alert on a potential hazard to the Ministry of Economy, which then informs the public authorities and the general public about it through mass media channels and messaging.
- The Government of Armenia should accelerate its plans to set up an **Early Warning System for hazardous hydrometeorological phenomena** as envisaged in several government plans and strategies. The Public Investment Committee has allocated funds for this purpose to the Hydrometeorology and Monitoring Center, and the Ministry of Environment is negotiating a project on this topic with the GCF. Implementation of the early warning system in the agricultural sector with **systematic management, a decision-making procedure, and a clear distribution of roles and responsibilities** should be a priority.

Sustainable soil practices

- The key documents protecting land resources from climate change impact include the 2001 **Land Code** (notably, Article 36) and the 2005 **Law on Melioration of Agricultural Land**. In addition, several government programmes aim to improve agricultural land use, information on the agricultural sector and consolidate small-size farms.
- Armenia could reinforce efforts to support farmers in implementing practices for **maintaining soil fertility** by natural means such as crop rotation, organic fertilisation, and creation of forested zones to combat erosion. Extension services should support implementation of such practices on farm level (FAO, 2025^[42]).

Water and irrigation

- The government approved a **Water Sector Adaptation Plan and Programme of Measures for 2022-26**. To implement the Plan, the government designated the Ministry of Internal Affairs as the authorised body for flood risk prevention and management according to the EU Floods Directive, defined floods and flood risks, and developed requirements for flood hazard and risk maps. There are draft Guidelines for the Development of a Community Disaster Risk Management Plan and Approval of a Model Plan.
- Several government programmes aim to improve and modernise irrigation. The government has supported the creation of “intensive horticulture” orchards which use modern irrigation practices. In addition, several international organisations are carrying out projects on irrigation.
- However, the outstanding challenges are **deterioration of water utilities and infrastructure** and poor **water resources planning**, including the strategic development and management of water storage.
- Several measures of the Water Sector Adaptation Plan remain to be implemented, including:
 - regulatory and incentive mechanisms for the **reuse of treated wastewater**
 - mainstreaming of **adaptation measures** in the water sector legislation
 - development of a **model flood management plan** (to be done by the Ministry of Internal Affairs)
 - development of a **drought emergency management plan** (to be done by the Ministry of Environment)
- Armenia should adopt a **flood risk and hazard management policy** and a **drought policy** in line with CEPA provisions.
- There is a need to renovate existing and develop additional **irrigation systems** (World Food Programme and Prisma LLC, n.d.^[63]). This includes improvement of their efficiency such as leakage reduction, removal of open channels and weed removal in the water channels. Efforts are also needed to continue promotion of water saving irrigation methods such as drip irrigation.

Pest, disease and invasive species management

- Armenia's **2023-2026 Action Plan for the Implementation of the Agricultural Sector Strategy** envisages development of a rapid response system for outbreaks of the most dangerous diseases and pests, including due to climate change. As a result, Armenia has recently revised its **Law on Phytosanitary** and has drafted a law on establishing a Working Group for the purpose of introducing the rapid response system.
- In addition, Armenia has a **roadmap for implementing CEPA's Chapter 4** on sanitary and phytosanitary matters.
- Armenia's **Food Safety Inspection Body**, reporting to the Prime Minister's Office, carries out phytosanitary monitoring of fruits and berries.
- However, Armenia's legal **framework** should recognize the concept of **pest- or disease-free areas and areas of low pest or disease prevalence** (regionalization), prescribed by the SPS Agreement.

Development, certification and use of climate resistant seeds or plant varieties

- The 2005 **Law On Seeds** as well as secondary legislation regulate climate resistant seeds and plant varieties.
- Armenia is prioritising and making efforts to establish a certification system for seeds and planting material through a recent **Law on Seeds and Seedlings**, which entered into force in 2023; amendments to the **Code on Administrative Offences** and the law on inspections; and the provisions of the **2023-2026 Action Plan for the Implementation of the Agricultural Sector Strategy**.
- The **Scientific Center** of Vegetable, Melon and Industrial Crops SNCO of the Ministry of Economy carries out testing of locally produced drought and heat-resistant vegetable crop varieties.
- Armenia approves a yearly programme on **State Standardisation**, which aims to develop and revise seed and plant material in line with international and regional standards.
- There is a need to **facilitate the discovery and import of climate resistant crops and promote their use** (World Food Programme and Prisma LLC, n.d.^[63]).
- Nurseries would benefit from an improvement in the **certification and transparency of seeds/seedlings and plant material** as well as better access to them, and better professional knowledge and financing.

Extension and advisory services

- The **2023-26 Action Plan for the Implementation of the Agricultural Sector Strategy** aims to strengthen the professional capacity of farms and raise awareness about resource-conserving agriculture. The main institution for providing agricultural extension services is the **Department of Agricultural Extension, Innovation and Monitoring (Extension Department)** in the Ministry of Economy, regulated by a 2019 Charter.
- However, **extension and advisory services** for the agricultural sector must be expanded, and the Extension Department needs more **staff to deliver the services** that it provides with better regional coverage.
- There is a particular need for **capacity building of soil and climate change specialists**. This should cover management practices that increase water-holding capacity and erosion prevention, which are important factors in both heavy rainfall and prolonged drought.

Innovation for climate change adaptation

- Armenia's **Agricultural Sector Strategy** highlights innovative solutions, and the National Agrarian University of Armenia is undertaking measures to promote innovative technologies in agriculture.
- The government of Armenia would benefit from developing a systemic approach to **technological innovation for climate change adaptation in agriculture**. This includes:
 - increased research and development of **climate-smart agricultural technologies**
 - **technology transfer and extension services** to disseminate knowledge and provide training (e.g. digital platforms, farmer field schools, peer-to-peer learning networks)
 - development of **financing models to support adoption of new technologies**

- Farmers require more knowledge sharing and dissemination regarding the **technologies to deal with climate change impact**.
- The government should promote and enable the **adoption of technologies to deal with early frost**, among other threats.

Environmental certification

- Several **certification schemes** operate in the horticultural sector, including EcoCert (which does not yet have an office) and EcoGlobe for organic agriculture.
- The **State Support Programme for Intensive Horticulture** requires a certificate of origin and quality of planting material once the certification system for planting material is set up in Armenia.

Use of pesticides and fertilisers

- The **Law on Phytosanitary** regulates pesticide use in Armenia. It has recently been amended to allow imports of pesticides and agrochemicals from certain developed countries without additional laboratory checks, which should make it less burdensome for producers to access them.
- A new **Law on Chemical Substances** will regulate the production, import, export, use and classification of pesticides and industrial chemicals in the country. It also aims to establish a register of chemical substances and mixtures in Armenia under the authority of the Ministry of Environment.
- A new government decision from 2023 established **technical safety requirements for storage and safe use of mineral fertilisers** in order to protect the environment in addition to human life and health. The Ministry of Economy with GIZ support is testing new, local organic fertilisers to tackle the popularity of nitrogen fertilisers.
- The **Food Safety Inspection Body** monitors the use of pesticides, nitrates, heavy metals and GMOs.
- Neither the Law on Phytosanitary nor the secondary legislation regulate **sustainable use of pesticides** after their state registration, and it is recommended to develop such a legal mechanism (FAO, 2025^[42]).
- **Enforcement and traceability of chemical use** should be improved by raising penalties, improving information on pesticides used by farmers, and providing training to phytosanitary inspectors.
- **Quality pesticides** should be made more available on the Armenian market, and more knowledge should be provided on pesticide sellers.
- It is popular for farmers to apply nitrogen fertilisers, and they are dependent on their import. It is advisable to adopt **regulations on the overuse of nitrogen fertilisers**.

Organic agriculture

- The Law on Organic Agriculture defines and sets out the basic rules for organic agriculture in Armenia. The **2023-26 Action Plan for the Implementation of the Agricultural Sector Strategy** envisages support to developing organic agriculture, including amending the **Law on Organic Agriculture** and testing of locally produced organic fertilisers. The EcoGlobe and EcoCert certification bodies are operational.
- **Regulations on the control of organic products** should be adopted as this topic is not addressed by the Law on Organic Agriculture.

- The rules and procedures for **organic certification** need be clarified and revised (e.g. the certification subject is not clear); and they should make it possible for small farmers to apply for group certification (FAO, 2025^[42]).
- The principles of **accreditation of organizations carrying out inspection and certification of organic products** must be harmonised with those of the EU by considering natural systems and cycles. Legislation should be aligned with the EU Regulation 2018/848 on organic production and labelling.

Annex A. Overview of the relevant provisions of the EU-Armenia Comprehensive and Enhanced Partnership Agreement (CEPA)

The European Union-Armenia CEPA was signed in November 2017 and entered into force on 1 March 2021 (European Commission, 2021^[49]). It provides a solid basis to further enhance the reform agenda in areas of mutual interest.

Its most relevant provisions for this project are:

- **Title IV, Chapter 3 on Statistics**, Article 32(b): Agricultural statistics, including agricultural census.
- **Title V, Chapter 3 on Environment** provisions on co-operation with the overall aim of sustainable development and greening the economy. Relevant issues mentioned in Article 46 are:
 - environmental governance and horizontal issues, including strategic planning, education and training, monitoring and environmental information systems, inspection and enforcement, environmental liability etc.
 - air quality
 - water quality and resource management, including flood-risk management, water scarcity and droughts
 - waste management
 - nature protection, including forestry and conservation of biological diversity
 - industrial pollution and industrial hazards
 - chemicals management
 - integration of the environment into areas other than environmental policy
 - approximation of certain EU Directives included in Annex III, including on community action in the field of water policy (2000/60/EC)¹⁰, assessment and

¹⁰ The following provisions of that Directive shall apply: Adoption of national legislation and designation of competent authority/ies; Identification of river basin districts and appropriate co-ordination for the preservation of international rivers, lakes and coastal waters (Article 3(1)- 3(7)); Analysis of the characteristics of river basin districts (Article 5); Establishment of programmes for monitoring water quality (Article 8); Preparation of river basin management plans, consultations with the public and publication of these plans (Articles 13 and 14). Timetable: Those provisions shall be implemented within 5 years of the entry into force of this Agreement.

management of flood risks (Directive 2007/60/EC)¹¹, protection of waters against pollution caused by nitrates from agricultural sources (as amended) (Directive 91/676/EEC)¹².

- **Title V, Chapter 4 on Climate Action, Article 52**, states that co-operation shall promote measures at domestic, regional and international level, including with regard to:
 - mitigation of climate change
 - adaptation to climate change
 - market and non-market mechanisms for addressing climate change
 - research into and the development, demonstration, deployment, transfer and diffusion of new, innovative, safe and sustainable low-carbon and adaptation technologies
 - the mainstreaming of climate considerations into general and sector-specific policies
 - awareness raising, education and training.
- **Title V, Chapter 4, Article 54**, states that co-operation will cover, among others:
 - measures to implement the Paris Agreement
 - measures to enhance capacity to take effective climate action
 - the development of an overall climate strategy and action plan for the long-term mitigation of and adaptation to climate change
 - the development of vulnerability and adaptation assessments
 - measures to promote technology transfer
 - measures to mainstream climate considerations into sector-specific policies
- **Title V, Chapter 10 on Agriculture and Rural Development, Article 70 states that** “The Parties shall cooperate to promote agricultural and rural development, in particular through progressive convergence of policies and legislation.”
- **Title V, Chapter 10, Article 71**, includes provisions on co-operation to reach the following objectives, among others:
 - promoting the modernisation and the sustainability of agricultural production

¹¹ The following provisions of that Directive shall apply: Adoption of national legislation and designation of competent authority/ies; Undertaking preliminary flood assessment (Articles 4 and 5); Preparation of flood hazards maps and flood risks maps (Article 6); Establishment of flood risk management plans (Article 7). Timetable: Those provisions shall be implemented within 5 years of the entry into force of this Agreement.

¹² The following provisions of that Directive shall apply: Adoption of national legislation and designation of competent authority/ies; Establishment of monitoring programmes (Article 6); Identification of polluted waters or waters at risk and designation of nitrate vulnerable zones (Article 3). Timetable: Those provisions shall be implemented within 4 years of entry into force of this Agreement. The provision on “Establishment of action plans and codes of good agricultural practices for nitrate vulnerable zones (Articles 4 and 5)” shall be implemented within 8 years of the entry into force of this Agreement. Armenia’s government is undertaking nitrate mapping to implement this Directive and will receive support to Directive implementation within the “EU4Environment – Water Resources and Environmental Data” programme.

- improving the competitiveness of the agricultural sector and the efficiency and transparency of the markets
- promoting quality policies and their control mechanisms, in particular geographical indications and organic farming
- disseminating knowledge and promoting extension services to agricultural producers.
- **Title VI, Chapter 4 on Sanitary and phytosanitary matters**, sets out the principles applicable to SPS measures in trade between the Parties, as well as cooperation in animal welfare.
- **Chapter 7, Intellectual property Subsection V, Patents**, Article 253: Standards concerning the protection of plant variety rights.

In addition, **the following parts of the CEPA are relevant:**

- **Title V, Chapter 1 on Transport** includes provisions on transport co-operation to develop sustainable transport systems (Article 37) and to improve the movement of goods with the EU (Article 38);
- **Title V, Chapter 5 on Industrial and Enterprise Policy** includes an agreement to co-operate to support the establishment of export promotion activities in Armenia (Article 58).
- **Title VI, Chapter 9 on Trade and Sustainable Development** includes provisions for reaffirmation of commitments to implement and reach the objectives of the UNFCCC, the Kyoto Protocol thereto of 1998 and the Paris Agreement of 2015 (Article 275); to facilitate removal of obstacles to trade or investment concerning goods and services of particular relevance for climate change mitigation and adaptation such as sustainable renewable energy and energy-efficient products and services (Article 276); and on biological diversity (Article 277) and on sustainable management of forests and trade in forest products (Article 278).

The President of the Republic of Armenia signed a law initiating Armenia's EU accession on 4 April 2025, called "**On the Initiation of the Republic of Armenia's Membership Process in the European Union**" (News.cn, 2025^[50]). On 12 February 2025, the National Assembly of the Republic of Armenia adopted a bill endorsing Armenia's EU accession at the first reading (Armenpress, 2025^[51]).

Bibliography

- ADB (n.d.), *Armenia: Sustainable Water Use Assessment for Productivity Enhancement (ARM-SWAP)*, <https://www.adb.org/projects/58515-001/main>. [42]
- Ahmed, A. (2024), "Land abandonment after land grabbing: exploring the implications for local climate change adaptation and ecological restoration in Ghana", *Regional Environmental Change*, <https://doi.org/10.1007/s10113-024-02232-5>. [71]
- Ampera Consulting (2024), *Value Chain Analysis of Apricot, Peaches, Raspberry and Walnut in Armenia*. [22]
- Arka News Agency (2024), *Armenia Developing Investment Proposal for Biological Fertiliser Production*, http://am/en/news/economy/armenia_developing_investment_proposal_for_biological_fertilizer_production/?sphrase_id=2671493 (accessed on 12 March 2024). [48]
- Arka News Agency (2024), *Armenia Wants to Allow Import of Pesticides from Some Countries without Laboratory Checks*, https://www.arka.am/en/news/business/armenia_wants_to_allow_import_of_pesticides_from_some_countries_without_laboratory_checks/ (accessed on 12 March 2024). [47]
- Armenpress (2025), *Armenian parliament adopts EU bill*, <https://armenpress.am/en/article/1211823>. [64]
- Armstat (2024), *Foreign Trade of the Republic of Armenia (According to the EEU Commodity Nomenclature of External Economic Activity at 10-digit level)*, <https://www.armstat.am/en/?nid=778>. [21]
- CBI (2023), *What Requirements Must Fresh Fruit and Vegetables Comply with to be Allowed on the European Market?*, <https://www.cbi.eu/market-information/fresh-fruit-vegetables/buyer-requirements>. [57]
- CC Armenia (2023), *CC Adaptation Monitoring and Evaluation Standard Operating Protocols in Water and Agriculture Sectors*, <https://nature-ic.am/en/publications/cca-monitoring&evaluation-standard-operating-protocols-water-and-agriculture>. [25]
- CC Armenia (2023), *RA Government Adopted 2023-2026 Action Plan for the Implementation of the Agricultural Sector Strategy*, <https://nature-ic.am/en/news/ra-government-adopted-2023-2026-action-plan-for-the-implementation-of-the-agricultural-sector-strategy>. [26]
- CC Armenia (2023), *The Developed Draft Climate Law of Armenia Presented to the National Stakeholders*, <https://nature-ic.am/en/news/the-draft-climate-law-presented-to-the-national-stakeholders>. [27]
- CC Armenia (2022), *Tavush and Shirak Marz Adaptation Plans*, <https://nature-> [24]

- ic.am/en/publications/tavush-and-shirak-marz-adaptation-plans/.
- Crawford, C. et al. (2022), “Rural land abandonment is too ephemeral to provide major benefits for biodiversity and climate.”, *Science Advances*, <https://doi.org/10.1126/sciadv.abm8999>. [72]
- EBRD (2022), *Green Growth for SMEs in Armenia, Report on Roadmap, Action Plan and Recommendations*. [13]
- EcoGlobe (n.d.), *EcoGlobe*, <https://www.ecoglobe.com/>. [49]
- EcoLur (2024), *EcoLur’s Analysis of CEPA and Roadmap Climateic Action Performance Sent to RA Deputy Prime Minister’s Office*, <https://www.ecolur.org/en/news/dialog-with-officials/15709/>. [50]
- European Commission (2021), *Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions: Forging a Climate-Resilient Europe - the New EU Strategy on Adaptation to Climate Change*, <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52021DC0082>. [56]
- European Commission (2021), *The EU and Armenia Comprehensive and Enhanced Partnership Agreement enters into force*, https://ec.europa.eu/commission/presscorner/detail/en/ip_21_782. [62]
- European Commission (2020), *Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions: A Farm to Fork Strategy for a Fair, Healthy and Environmentally-Friendly Food System*. [55]
- European Commission (2019), *Green Deal Communication*. [53]
- European Commission (n.d.), *Farm to Fork Strategy*, https://food.ec.europa.eu/horizontal-topics/farm-fork-strategy_en. [54]
- European Commission (n.d.), *The EU: A Common Market for Plants and Plant Products*. [58]
- European Council (2025), *European Green Deal*, <https://www.consilium.europa.eu/en/policies/european-green-deal/#:~:text=The%20European%20Green%20Deal%20is,reaching%20climate%20neutrality%20by%202050>. [52]
- FAO (2025), *Study on the European Union–Armenia Comprehensive and Enhanced Partnership Agreement (CEPA)*. [44]
- FAO (2024), *Fostering Sustainable Future in Armenia: The Role of Sustainable Land Management Initiatives*, <https://www.fao.org/armenia/news/detail-events/en/c/1718031/>. [18]
- FAO (2023), *Overview of the Fruit and Vegetable Sector in Eurasian Economic Union Countries*, <https://doi.org/10.4060/cc4267en>. [15]
- FAO (2022), *Comprehensive analysis of the disaster risk reduction system for the agricultural sector in Armenia*, <https://doi.org/10.4060/cb8677en>. [32]
- FAO (2005), *Community Based Fire Management in Spain*, Forest Protection Working Papers, <https://www.fao.org/4/AG045E/AG045E00.pdf>. [69]
- FAO (n.d.), *Law No OH-140-N “On Phytosanitary”*, [43]

- <https://www.fao.org/faolex/results/details/en/c/LEX-FAOC140773/>.
- GCF (2023), *Scaling Up National Adaptive Capacities for Climate Change-Driven Natural Hazards through Strengthening Monitoring and Early Warning Systems*, [34]
<https://www.greenclimate.fund/document/scaling-national-adaptive-capacities-climate-change-driven-natural-hazards-through> (accessed on 25 March 2025).
- Government of Armenia (2023), *United Nations Convention to Combat Desertification - Performance Review and Assessment of Implementation System - Seventh Reporting Process - Report from Armenia*. [3]
- Government of the Republic of Armenia (2023), *Decree of the Government of the Republic of Armenia from 28 December 2023 No. 2318-L on Approval of Long-term Greenhouse Gas Emission Development Strategy of the Republic of Armenia (until 2050)*. [2]
- Government of the Republic of Armenia (2022), *Law No. HO-345-N “On Seeds and Seedlings”*, [45]
<https://www.fao.org/faolex/results/details/en/c/LEX-FAOC215464>.
- Government of the Republic of Armenia (2022), *State Support Programme for the Consolidation of Agricultural Lands for 2023-2025*, [38]
<https://www.arlis.am/DocumentView.aspx?DocID=166998>.
- Government of the Republic of Armenia (2020), *Agricultural Land Use Efficiency Concept and Programme of Measures*, <https://www.arlis.am/DocumentView.aspx?docID=138498>. [37]
- Government of the Republic of Armenia (2020), *Strategy of the Main Directions Ensuring Economic Development in the Agricultural Sector of the Republic of Armenia for 2020-2030*. [8]
- Government of the Republic of Armenia (2019), *Summary of the Strategy of the Main Directions Ensuring Economic Development in Agricultural Sector of the Republic of Armenia for 2020-2030*. [7]
- Government of the Republic of Armenia (2014), *Strategic Programme for Prospective Development (2014–2025)*, <https://www.gov.am/en/prsp/>. [68]
- Government of the Republic of Armenia (2008), *Law of the Republic of Armenia on Organic Agriculture*, https://members.wto.org/crnattachments/2008/tbt/arm/08_2072_00_et.pdf. [67]
- Government of the Republic of Armenia (2005), *Law on Melioration of Agricultural Lands*, [36]
<http://www.irtek.am/views/act.aspx?aid=29970>.
- Government of the Republic of Armenia (2001), *Land Code of the Republic of Armenia*, [35]
https://translation-centre.am/pdf/Translat/HH_Codes/Land_Code_24102018_en.pdf.
- IFAD (2018), *Republic of Armenia: Country Strategic Opportunities Programme 2018-24*. [20]
- Invest in Armenia (2025), *Invest in Armenia’s Agriculture*, <https://fliphtml5.com/zzrid/nqzy/> [12]
 (accessed on 13 June 2025).
- Invest in Armenia (2024), *Invest in Armenia’s Food Processing 2024*, [16]
<https://fliphtml5.com/zzrid/yhrl/> (accessed on September 2024).
- ISO (2023), *ISO 14001:2015, Environmental Management Systems – Requirements with Guidance for Use*, <https://www.iso.org/standard/60857.html>. [59]

- Ministry of Economy (2024), *2024 Progress Report of 2023-2026 Action Plan for the Implementation of the Agricultural Sector Strategy*. [33]
- Ministry of Economy of Armenia (2025), *2024 Progress Report of 2023-2026 Action Plan for the Implementation of the Agricultural Sector Strategy*. [39]
- Ministry of Economy of Republic of Armenia (2024), *Agricultural co-operation*, <https://www.mineconomy.am/page/1331>. [19]
- Ministry of Economy of the Republic of Armenia (2023), *State Support Programme on the Development of Intensive Horticulture, Introduction of Modern Technologies and Stimulation of the Production of Non-Traditional High-Quality Crops in the Republic of Armenia*, <https://mineconomy.am/en/page/1948>. [66]
- Ministry of Environment of the Republic of Armenia (2025), *The Operation of a State-of-the-Art Meteorological Station Installed on the Shores of Lake Sevan Was Solemnly Launched*, <http://www.env.am/en/news/operation-of-a-state-of-the-art-meteorological-station-installed>. [29]
- Ministry of Environment of the Republic of Armenia (2020), *Fourth National Communication on Climate Change under the United Nations Framework Convention on Climate Change*. [1]
- Mullinax, T. and R. Courtney (2023), *Old orchards and old problems for pest control*, <https://goodfruit.com/old-orchards-and-old-problems-for-pest-control/> (accessed on 15 May 2025). [70]
- News.am (2024), *Deputy Minister of Economy: Only 49.5% of arable land in Armenia is cultivated*, <https://news.am/eng/news/837984.html>. [17]
- News.cn (2025), *Armenian President Signs Law to Initiate EU Accession Process*, <https://english.news.cn/europe/20250405/d473fff9a30f4c178f451e028dfecfc/c.html>. [63]
- Prime Minister of the Republic of Armenia (2021), *Press release: The Government Approved the State Support Programme for the Development of Intensive Horticulture, Introduction of Modern Technologies and Promotion of Production of Non-traditional High-value Crops*, [https://www.primeminister.am/hy/press-release/item/2021/06/03/Cabinet-meeting/#photos\[pp_gal_1\]/0/](https://www.primeminister.am/hy/press-release/item/2021/06/03/Cabinet-meeting/#photos[pp_gal_1]/0/). [14]
- SQF (n.d.), *What Is SQF?*, <https://www.sqfi.com/our-program/what-is-sqf>. [60]
- Strategic Development Agency (2024), *Irrigated Agriculture Development in Ararat and Armavir Marzes (IADAAM)*, <https://sda.am/en/projectportfolioeng/irrigated-agriculture-development-in-ararat-and-armavir-marzes-iadaam/>. [40]
- UNDP (2023), *Armenia's Weather Forecasting Revolution: Navigating Climate Challenges with Innovative Technology*. [28]
- Unified Website for Publication of Legal Acts (2025), *Approval of the Support Programme for Obtaining Certificates of Compliance with Management Systems and Products*. [46]
- WFP (2025), *Annual Country Reports - Armenia*. [41]
- WMO (2023), *Armenia Scorecard*. [31]
- World Bank (2024), *Armenia - General Water Security Assessment*. [5]

- World Bank (2024), *Armenia Country Climate and Development Report*, [4]
<http://hdl.handle.net/10986/42379>.
- World Bank (2023), *Competitive Agriculture and Food Security in the South Caucasus, Agriculture Competitiveness in Armenia – Enhancing Farm and Value Chain Support Mechanisms*. [65]
- World Bank (2023), *Employment in Agriculture (% of total employment) (modelled ILO estimate)*, [9]
<https://data.worldbank.org/indicator/SL.AGR.EMPL.ZS> (accessed on September 2024).
- World Bank (2022), *Agricultural land (% of land area) - Armenia*, [11]
<https://data.worldbank.org/indicator/AG.LND.AGRI.ZS?locations=AM&view=map-LC>.
- World Bank (2021), *Climate Risk Country Profile: Armenia*. [6]
- World Bank (2018), *Modernising Weather, Climate and Hydrological Services: A Roadmap for Armenia*. [30]
- World Bank (2014), *Building Resilience to Climate Change in South Caucasus Agriculture*. [23]
- World Bank (n.d.), *Agriculture, forestry, and fishing, value added (% of GDP)*, [10]
<https://data.worldbank.org/indicator/NV.AGR.TOTL.ZS> (accessed on 13 June 2025).
- World Bank (n.d.), *Climate Change Knowledge Portal: Armenia*, [51]
<https://climateknowledgeportal.worldbank.org/country/armenia>.
- World Food Programme and Prisma LLC (n.d.), *Impact of Climate Change on Livelihoods and Food Security in Armenia*. [61]