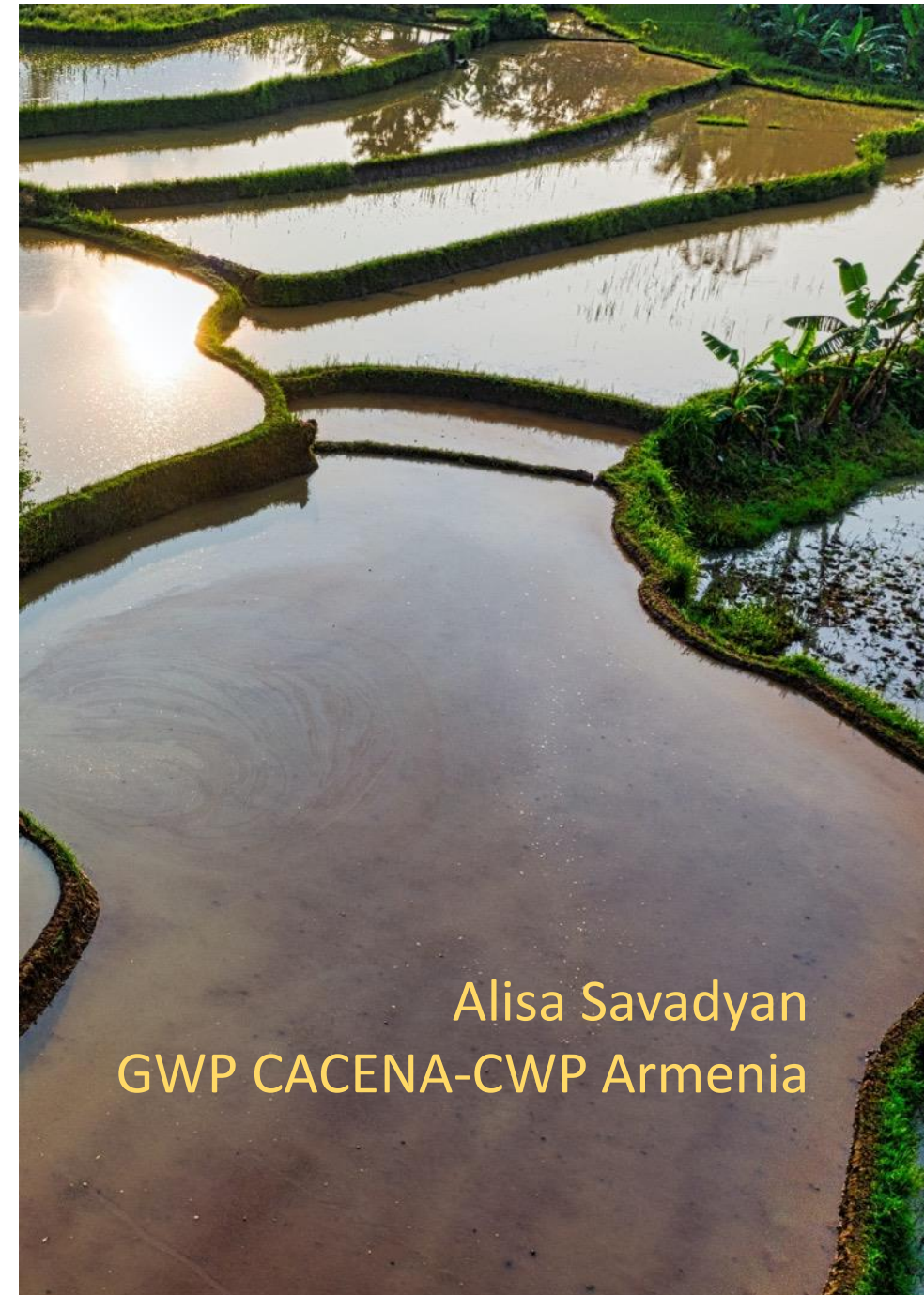


# Drought sector study and development of the drought management and emergency plan

Virtual Exchange: Institutional Coordination for Drought Resilience



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## Project goal

To identify gaps in the existing drought risk management system and develop an appropriate plan for development and stagnating of a drought risk management system, which will include:

- drought risk forecasting,
- continuous monitoring and vulnerability assessment,
- processes for preventing or mitigating drought risks,
- response and recovery following a drought.

## Project duration

2025 March-2026 March

## Project Goals

- Drought risk assessment situation and structure study
- Development of the Model/Template for Drought Management Plan
- Selection of Pilot area/ Ararat River Basin Management Area
- Development Program of measures

## Additional task

- Development of Masis community local DRR Plan and program of measures  
(ECHO funded “Evidence-Based Assessment of Early Warning Systems and Community Resilience to Strengthen National Disaster Risk Management in Armenia” project implemented by “HEKS/EPER Armenia”.)

# Drought Management Plan

- Legal assessment (secondary legislation)
- Meteorological drought in Ararat RBMA. The SPEI index was applied based on multi-year station series, focusing on the April-October season (vegetation season).
- Hydrological drought: SDI (quarterly flow comparison), SSFI (monthly flow standardization), and SRSI (standardized reservoir supply index) indices were applied for selected hydrological observation points (e.g. Vedi–Urtsadzor, Arpa–Jermuk, Azat–Garni, Yeghegis–Shatin) based on the 1961–2024/2000–2024 series.

# Drought Management Plan

- Climate forecasts. A study was also conducted using remote sensing technologies, based on the ERA5-Land dataset, which is valuable because it combines satellite observations with mathematical models, providing continuous and homogeneous information for the entire 1994–2024 time period.
- This model allows for reliable assessment of both current and historical drought episodes without being entirely dependent on local measurements, which is important in areas with sparse monitoring stations.
- During the analysis, remote sensing datasets (Sentinel, ERA5-Land) were combined with observations from Armenia's “HayHydromet” to ensure both spatial completeness and local accuracy.

The comparison revealed a small difference in the accuracy of the estimates, which means that the study of past drought experience using the two methods was quite similar.

## Key Findings

- The methodologies of drought assessment are incomplete,
- There is no unified early warning and alert system,
- Hot and dry weather conditions have become more frequent,
- SDI/SSFI analyses show prolonged negative phases of hydrological drought, especially at several hydrological monitoring sites in 2001–2006 and 2022–2023,
- **Hydrological droughts:** SDI/SSFI analyses show prolonged negative phases of hydrological drought, especially in 2001–2006 and 2022–2023 at a number of hydrological observation points.
- The general pattern is: in the spring months humidity usually increases because of snowmelt and rainfall and in summer-autumn, the predominance of negative deviations, which leads to a decrease in water resources and an increase in irrigation demand.

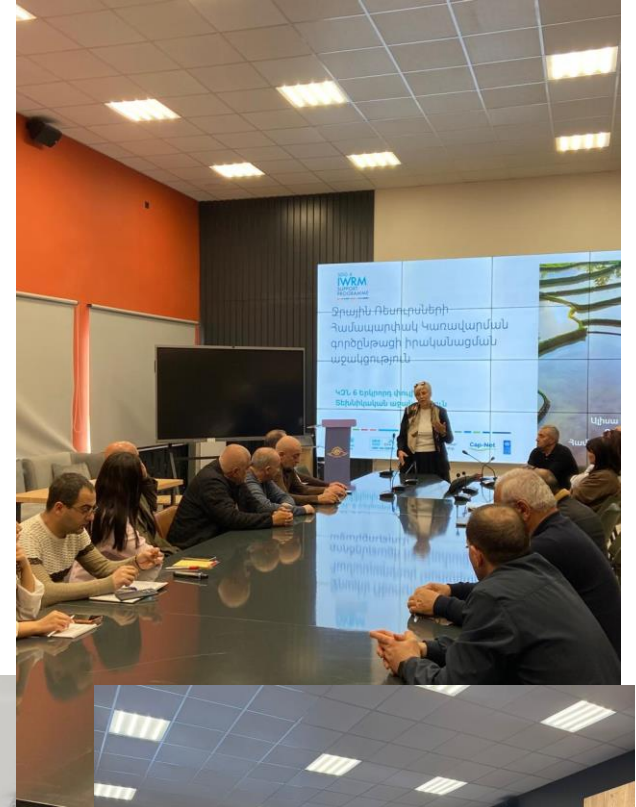
## Key Findings

- The climate change scenarios predicts a continuation of temperature increases and the risk of seasonal redistribution of precipitation, which will increase summer moisture deficit and drought risk.
- In river basins, water flow is expected to decrease to depending on the observation horizon, which increases the seasonal water scarcity and requires changes in water storage and conservation regimes.
- The Drought Management Plan is a strategic tool for ensuring the climate and water security of the Republic of Armenia.
- The plan can become a basic document on the basis of which existing strategies will be updated, by-laws will be developed, programs and investment packages will be formed aimed at increasing the resilience of water management, agriculture, lands and natural ecosystems to drought risk.

# OBJECTIVES OF THE DROUGHT MANAGEMENT PLAN

- Reduce the socio-economic and environmental consequences of drought
- Strengthen the integrated system of forecasting, early warning, alerting and response
- Increase the capacities of state, local self-government and the private sector
- Reduce the vulnerability of water and land resources to drought

SDG 6  
**IWRM** Project events  
SUPPORT  
PROGRAMME



**THANKS FOR ATTENTION**

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