Meeting of the Board
25 – 28 March 2026
Songdo, Incheon, Republic of Korea
Provisional agenda item 10

GCF/B.44/02/Add.03
4 March 2026

Consideration of funding proposals – Addendum III

Funding proposal package for SAP068

Summary

This addendum contains the following six parts:

a) A funding proposal titled "Scaling up national adaptive capacities for climate change-driven natural hazards through strengthening monitoring and early warning systems";
b) No-objection letter issued by the national designated authority(ies) or focal point(s);
c) Secretariat's assessment;
d) Independent Technical Advisory Panel's assessment;
e) Response from the accredited entity to the independent Technical Advisory Panel's assessment; and
f) Gender documentation.

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Simplified Approval Process
Funding Proposal

Project/Programme title:	**Scaling up national adaptive capacities for climate change-driven natural hazards through strengthening monitoring and early warning systems**
Country(ies):	**Armenia**
National Designated Authority(ies):	**Ministry of Environment**
Accredited Entity:	**Environmental Project Implementation Unit (EPIU) State Agency**
Date of first submission:	**2025/04/29**
Date of current submission/ version number	**2026/01/09, V006**

GREEN CLIMATE FUND

A. PROJECT/PROGRAMME SUMMARY

A.1. Has this FP been submitted as a SAP CN before?			Yes ☒ No ☐		
A.2. Is the Environmental and Social Safeguards Category C or I-3?			Yes ☒ No ☐		
A.3. Project or programme	*Indicate whether this FP refers to a combination of several projects (programme) or one project.* ☒ Project ☐ Programme	**A.4. Public or private sector**	☒ Public sector ☐ Private sector	**A.5. RfP**	Not applicable

A.6. Result area(s)		**GCF Contribution**	**Co-financers' contribution**
	Mitigation total	Enter number %	Enter number %
	☐ Energy generation and access	Enter number %	Enter number %
	☐ Low emission transport	Enter number %	Enter number %
	☐ Buildings, cities and industries and appliances	Enter number %	Enter number %
	☐ Forestry and land use	Enter number %	Enter number %
	Adaptation total	Enter number %	Enter number %
	☒ Most vulnerable people and communities	40 %	Enter number %
	☒ Health and well-being, and food and water security	30 %	Enter number %
	☒ Infrastructure and built environment	30 %	Enter number %
	☐ Ecosystem and ecosystem services	Enter number %	Enter number %

A.7.1. Expected mitigation outcome *(Core indicator 1: GHG emissions reduced, avoided or removed / sequestered)*	N/A	**A.7.2 Expected adaptation outcome** *(Core indicator 2: direct and indirect beneficiaries reached)*	Total: 2,969,100 (total population)	
			1,074,100 – direct beneficiaries[1]	1,895,000 – indirect beneficiaries[2]
			36.18% of the country population	63.82 % of the country population
A.8.1. Total investment (GCF + co-finance)	Amount: 9,999,990 USD	**A.8.2 Total GCF funding requested** (max USD 25M)	Amount: 9,499,990 USD	
A.9. Type of financial instrument requested for the GCF funding	☒ Grant ☐ Loan ☐ Equity ☐ Guarantees ☐ Others:			

[1] The number of direct beneficiaries is the entire number of the population of the four selected marzes and the capital, Yerevan. This is based on the fact that the entire population of these areas will benefit directly from the upgrade in

A.10. Implementation period (months)	5 years (60 months)	**A.11. Total project/ programme lifespan (years)**	15 years (180 months)
A.12. Expected date of internal approval	N/A	**A.13. Has Readiness or PPF support been used to prepare this FP?**	Yes ☒ No ☐
A.14. Is this FP included in the entity work programme?	Yes ☐ No ☒	**A.15. Is this FP included in the country programme?**	Yes ☒ No ☐
A.16. Executing Entity information	"Hydrometeorology and Monitoring Center" State Non-Commercial Organisation (Armhydromet) will serve as an Executing Entity (EE) for Components 1 and 2 since it plays a key role in ensuring hydrometeorological security, supporting sustainable development, and enhancing economic resilience by conducting comprehensive observations, analyzing data, and providing reliable, accurate, and timely information. EPIU will serve as an EE for Component 3 of the project, drawing on its experience in anticipatory action, innovative resilience financing, and its collaboration with financial institutions, insurers, telecom operators, and technology providers. Further detail is provided in the Feasibility Study (Section 6.3.2).		

A.17. Scalability and potential for transformation (max. 100 words)

The project will catalyse Armenia's shift from fragmented hazard monitoring to a fully integrated, nationwide multi-hazard early warning system (MHEWS), expanding from localized alerts to interoperable, real-time climate information services in line with the WMO Early Warnings for All initiative. Scaling will be enabled through modernised observation networks, high-resolution forecasting models, open-data platforms, and centralized digital architecture, including feasibility for cell broadcast, creating strong entry points for private telecommunications and technology providers in early warning dissemination.

Institutional transformation will be anchored by operationalising the National Framework for Climate Services (NFCS), establishing a national coordination mechanism, and embedding climate information into sectoral planning. Community-level scalability will be achieved through participatory risk assessments, preparedness drills, and inclusive communication channels. The project will also stimulate market development for anticipatory action tools, climate micro-insurance, and public–private partnerships, creating long-term pathways for private companies to invest in resilience services.

Armenia is not the only country in South Caucasus region facing challenges of limited-resolution modelling capacity, reliance on external numerical weather prediction systems, and complex mountainous terrain. The project's upgraded forecasting and data-integration architecture will also offer strong regional scalability, since the systems and methodologies developed in Armenia can support future interoperability, shared learning, and potentially harmonized hence more accurate forecasting approaches across the region.

Together, these interventions establish a scalable, replicable, and financially sustainable model for Armenia's climate-resilient development.

Armhydromet infrastructure and equipment, resulting in improved meteorological services provided to the residents of the selected areas. Further elaborated in Section 5.8.2 of the Annex 2.

[2] The total number of indirect beneficiaries is the number of the entire population of Armenia excluding the number of direct beneficiaries, due to the fact that Activities 1.2-1.4, as well as the activities under Outputs 2 and 3 will benefit the remaining population of Armenia in an indirect way, improving the country's ability to withstand and manage climate-related risks and hazards, and to provide appropriate emergency response to the populations affected. Further elaborated in Section 5.8.2 of the Annex 2.

A.18. Project/Programme rationale, objectives and approach (max. 300 words)

The Armenia faces increasing climate-induced hazards, such as floods, flash floods, droughts, hailstorms, landslides, and extreme temperatures, that place growing pressure on communities, infrastructure, and climate-sensitive sectors. Although progress has been made, the country's climate information and early warning systems (CIEWS) remain fragmented and outdated, with limited forecasting accuracy, weak institutional coordination, and data systems that are not fully interoperable. Early warnings often do not reach vulnerable groups in timely or accessible formats, reducing the ability of communities and authorities to take early action. These systemic gaps across the early warning value chain hinder Armenia's ability to anticipate risks, prevent losses, and support climate-resilient development. Addressing these weaknesses is essential and aligns national priorities and the World Meteorological Organization's Early Warnings for All initiative.

The project aims to establish a modern, people-centred multi-hazard early warning system (MHEWS) through three core objectives. First, it will modernize meteorological and hydrological observation and forecasting systems by upgrading monitoring infrastructure, deploying high-resolution numerical weather prediction (NWP) models, and improving hazard modelling and data management. Second, it will strengthen early warning dissemination and preparedness by expanding multi-channel alerting systems, including telecommunications-based modalities, and enhancing risk communication and training for national, regional, and local actors. Third, it will develop innovative resilience financing mechanisms, such as forecast-based financing, anticipatory action tools, and climate micro-insurance, to sustain early action and encourage private-sector engagement.

The project adopts an integrated approach that combines technical upgrades, institutional strengthening, inclusive community engagement, and financial innovation. It will operationalize the National Framework for Climate Services (NFCS), establish a national coordination mechanism, and reinforce collaboration among Armhydromet, the Ministry of Environment, the Ministry of Internal Affairs, regional administrations, and private partners. Community-level activities, including vulnerability assessments, preparedness drills, and gender-responsive communication, will ensure that early warnings are accessible and actionable for vulnerable groups. By closing critical technical, institutional, and financial gaps in Armenia's early warning and climate information value chain, the project will enable a paradigm shift towards anticipatory action, risk-informed development, and long-term climate resilience.

B. PROJECT/PROGRAMME DETAILS

B.1. Context and baseline (max. 500 words)

1. Armenia is a landlocked country in the Caucasus region, bordering Georgia, Azerbaijan, Islamic Republic of Iran and Turkey and spans 29,743 total square kilometers. As of January 2025, its population is 2,961,796.[3] Armenia's capital city is Yerevan, with the territory of the country divided into 10 marzes (provinces). Armenia is a mountainous country with 77% of the terrain located at 1,000–2,500 meters (m) above sea level, with an average altitude of 1,830 m. Its highest point, Mount Aragats (4,095 meters), is a key geographical landmark. Armenia's diverse topography, characterized by depressions, plateaus, river valleys, and uplands, poses significant challenges for land use and infrastructure due to high seismic activity and geodynamic processes. These features, combined with limited forest and water resources, heighten the country's vulnerability to climate-related hazards, making the development of robust early warning systems critical for disaster risk reduction.

Map 1. Map of Armenia (source: United Nations Geospatial Information Section (UN-GIS), UN Maps (https://www.un.org/geospatial). Boundaries and names shown do not imply official endorsement or acceptance by the United Nations.)

Early Warning System and Disaster Risk Reduction baseline:

2. Armenia has a basic level of Early Warning Systems (EWS) to monitor climactic hazards such as flooding, droughts, landslides and hailstorms. There is a need for improvement, both technologically speaking and with regards to knowledge dissemination. To fully harness the benefits of EWS and disaster risk reduction (DRR), the Armenian government and local DRR authorities need to implement more robust strategies; ensure better project design and implementation; as well as carry out capacity building assessments to take the appropriate action required to protect the Armenian population from natural hazards. These measures would benefit from the inputs of various vulnerable groups such as rural, women, indigenous communities, and youth. This project seeks to enhance climate resilience and improve daily operations by providing more reliable weather, climate, and hydrological information.

3. The 'Early Warnings for All' initiative of the World Meteorological Organization (WMO) aims to safeguard individuals worldwide from hazardous weather, climate, and environmental events by establishing life-saving EWS by the end of 2027.[4] From this, the MHEWS was set up which provides timely information on impending hazardous weather or climate events, enabling governments, communities, and individuals to take proactive measures and minimize potential impacts. The four pillars of the MHEWS are:

[3] Worldometer. 2025. https://www.worldometers.info/world-population/armenia-population/#google_vignette
[4] WMO. 2025. https://wmo.int/activities/early-warnings-all/wmo-and-early-warnings-all-initiative

a. Pillar 1: Disaster risk knowledge
b. Pillar 2: Detection, observation, monitoring, analysis, and forecasting
c. Pillar 3: Warning dissemination and communication
d. Pillar 4: Preparedness and response capabilities

4. Despite progress in DRR over recent decades, significant gaps remain across the four MHEWS pillars. Limited resources and technical capacity have constrained the expansion of monitoring networks and the application of advanced tools such as hailstorm nowcasting and user-oriented climate services.[5] Inadequate funding has also hindered the establishment of radar systems and the adoption of high-resolution NWP models, which are essential for accurate forecasting and timely warnings. Hydrological models for flood and drought forecasting require modernization to strengthen detection, monitoring, and response. In addition, weak integration between meteorological, hydrological, and geological data systems, limited community awareness, insufficient communication channels, and fragmented institutional responsibilities continue to undermine the overall effectiveness and coordination of Armenia's early warning systems.

5. Recent evidence from the WMO Early Warnings for All (EW4All) Dashboard for Armenia further substantiates these gaps across the early warning value chain. The dashboard indicates that while Armenia demonstrates emerging institutional readiness and strong national commitment, critical deficiencies persist in monitoring density, forecasting resolution, impact-based warning coverage, and last-mile dissemination particularly for floods, heatwaves, and droughts affecting mountainous and rural areas. Limited integration between forecasting services and preparedness and response mechanisms further constrains the effectiveness of early action. These findings reinforce the need for targeted investment in modern observation systems, impact-based forecasting, and people-centred warning dissemination, directly aligning the proposed project with EW4All priorities and Armenia's most pressing early warning needs.[6]

6. To close existing gaps, the project will focus on strengthening Pillars 2 and 3 of the MHEWS while integrating selected elements of Pillars 1 and 4 for long-term resilience. Under Pillar 2 (Detection, Observation, Monitoring and Forecasting), the project will modernize meteorological and hydrological networks and introduce high-resolution NWP models to improve the accuracy of forecasts for Armenia's mountainous terrain. It will also promote the integration of meteorological, hydrological, and geological data systems to support timely, evidence-based decision-making. Under Pillar 3 (Warning Dissemination and Communication), standardized protocols, localized communication channels, and feedback mechanisms will be established to ensure that warnings are accessible, inclusive, and actionable. Elements of Pillars 1 and 4, including local knowledge integration and coordination with first responders, are embedded to reinforce national preparedness and sustain long-term system effectiveness.

7. This project falls under Sustainable Development Goal 13: Climate Action, in particular target 13.1 which focuses on strengthening resilience and adaptive capacity to climate-related hazards and natural disasters in all countries and target 13.3 which aims to improve education, awareness-raising and human and institutional capacity on climate change mitigation, adaptation, impact reduction and early warning.[7]

Climate Rationale

Climate change vulnerabilities in Armenia

8. Armenia faces increasing climate-related risks that threaten lives, livelihoods, and ecosystems. The most significant hazards include droughts, floods, hailstorms, landslides, and heatwaves, whose frequency and intensity have risen markedly over recent decades. These impacts are especially pronounced in mountainous and arid regions, where vulnerable rural communities depend heavily on agriculture and water resources for their livelihoods. Below is the elaboration on Armenia's climate trends, hazard profiles, and vulnerability indices a comprehensive analysis of which is provided in the Feasibility Study (Annex 2), which presents detailed datasets, modeling results, and geographic mapping of climate risks.

9. In 2015, Armenia joined the Sendai Framework for Disaster Risk Reduction 2015-2030 and subsequently developed and adopted the National Disaster Risk Management Strategy and Action Plan in 2017 (see point 18). Armenia's government has integrated Sendai priorities and risk-informed development into its SDGs and strategy and to address existing

[5] Zoï Environment Network. 2020. Concept and action plan for the National Framework for Climate Services in the Republic of Armenia.
[6] EW4All Dashboard for Armenia: https://earlywarningsforall.org/site/early-warnings-all/dashboards/early-warnings-all-dashboard
[7] United Nations Armenia. Sustainable Development Goals. https://armenia.un.org/en/sdgs/13

challenges, the country is continuously updating their DRR legal and regulatory framework. The Global Target G of the Sendai Framework: *Substantially increase the availability of and access to multi-hazard early warning systems and disaster risk information and assessments to the people by 2030* is significant as it centres on empowering people with knowledge and tools to better protect themselves and their communities from the devastating impacts of disasters. As Armenia faces a multitude of climate hazards, the Armenia government needs to adhere to this target in order to reduce the country's vulnerability status.

10. Armenia's risk profile: Due to significant exposure and vulnerability, Armenia is at high risk of natural disasters. The primary threats are geophysical as the nation is situated within a zone of high seismic activity as well as one third of the country being within a landslide hazard zone.[8] The ND-GAIN Matrix situates Armenia in the lower-right quadrant due to its low vulnerability score and high readiness score. While the country faces adaptation challenges, its favorable position suggests a strong capacity to adapt, especially with regards to disaster risk reduction. Armenia is classified as the 140th most vulnerable nation to climate change and 56th most ready nation.[9]

Climate change and hazards

11. Current Climate: Armenia has a continental climate, with substantial differences observed between summer peak temperatures (June to August) and winter low temperatures (December to February). In Armenia's capital, the peak temperature on average can reach up to 30ºC−33ºC whilst during winter this can be between 1ºC−3ºC.[10] The mean annual precipitation is 526 mm. In Armenia, altitude is the primary determinant of spatial temperature and precipitation patterns which is evident in Armenia's highest peaks which can receive up to 1,000 mm of precipitation annually while in the Ararat Valley, precipitation can be as low as 200 mm.

12. Historical climate: Long-term climate observations indicate that Armenia's temperatures have exhibited natural interannual and decadal variability, alongside a clear and accelerating warming trend in recent decades. Continuous observational records show a statistically significant increase in average annual temperatures over the long term, with the most pronounced warming occurring in recent decades, resulting in higher average temperatures, more frequent heat extremes, and increased climate-related risks (see Feasibility Study, Section 3.2). Seasonal climatological averages presented in Table 2 illustrate variability across different periods and seasons, including non-monotonic changes between earlier reference periods. These seasonal fluctuations do not contradict the long-term warming trend evident in the full observational record. Precipitation patterns have also evolved unevenly across seasons since the 1930s. During winter months (December-February), average precipitation has decreased by approximately 1.7 mm, while spring precipitation (March-May) has increased by around 7.6 mm (Table 3). These combined changes in temperature and seasonal precipitation contribute to heightened risks of floods, flash floods, droughts, heatwaves, and other high-impact hydro-meteorological hazards, underscoring the need for improved climate monitoring, forecasting, and early warning systems.

Table 1 Observed Average Seasonal Mean Temperature Armenia[11]

	1991-2020				1961-1990				1931-1960			
Months	**DJF**	**MAM**	**JJA**	**SON**	**DJF**	**MAM**	**JJA**	**SON**	**DJF**	**MAM**	**JJA**	**SON**
°C	-5.1	6.97	19.52	9.35	-5.64	6.4	18.72	8.84	-6.02	5.97	18.85	9.05

Table 2 Observed Seasonal Precipitation[12]

[8] Republic of Armenia. 2022. ARMENIA:MID-TERM REVIEW OF THE IMPLEMENTATION OF THE SENDAI FRAMEWORK FOR DISASTER RISK REDUCTION 2015-2030.
[9] ND-GAIN Index. https://gain-new.crc.nd.edu/country/armenia
[10] The World Bank. 2025. https://climateknowledgeportal.worldbank.org/country/armenia/climate-data-historical
[11] The climate estimates are based on the global dataset produced by the Climatic Research Unit (CRU) of University of East Anglia with has 0.5º x 0.5º (50km x 50km) spatial resolution. Table 2 presents seasonal climatological averages for selected reference periods. These period means illustrate regional climate characteristics but do not represent continuous trend analysis. Long-term warming trends in Armenia are assessed using continuous observational time series, as described in the Feasibility Study (Section 3.2).
[12] The climate estimates are based on the global dataset produced by the Climatic Research Unit (CRU) of University of East Anglia with has 0.5º x 0.5º (50km x 50km) spatial resolution.

	1991-2020				1961-1990				1931-1960			
Months	**DJF**	**MAM**	**JJA**	**SON**	**DJF**	**MAM**	**JJA**	**SON**	**DJF**	**MAM**	**JJA**	**SON**
mm	79.89	201.47	162.1	108.52	80.61	193.24	158.76	107.59	81.6	193.85	165.01	122.51

13. **Projected climate:** Tables 4 and 5 show Armenia's projected mean temperature and precipitation levels during the time periods of 2011-2040, 2041-2070, and 2071-2100 under the different emission scenarios.[13] What this shows is that until the end of the century, Armenia is likely to face an increase in climate impacts with regards to surface temperature and rainfall according to RCP 4.5 and RCP 8.5 emission scenarios. With regards to more area specific impacts, the future change in top indicators of the annual mean temperature, precipitation, soil moisture and water runoff under RCP 4.5 scenario over the time period of 2041-2070 is relatively significant, especially with regards to soil moisture and water runoff.[14] However, it is important to note that warming is projected to be strongly biased towards the summer months in Armenia leading to increased drought risk which is a particular threat to poorer rural communities dependent on subsistence agriculture.
    - Yerevan: +2°C in temperature, +1% in precipitation, -13% in soil moisture, and +1% in water runoff.
    - Aragatsotn: +2°C in temperature, +3% in precipitation, -9% of soil moisture, and -8% in water runoff.
    - Armavir: +2°C in temperature, +3% in precipitation, -7% of soil moisture, and -10% in water runoff.
    - Kotayk: +2°C in temperature, +1% in precipitation, -5% of soil moisture, and -15% in water runoff.
    - Shirak: +2°C in temperature, +1% in precipitation, -6% of soil moisture, and -12% in water runoff.

Table 3 Annual temperature (°C) changes under RCP 4.5 and RCP 8.5 scenarios

Emission scenario	**2011-2040**			**2041-2070**			**2071-2100**		
	min	mean	max	min	mean	max	min	mean	max
RCP 4.5	0.74	1.32	1.83	1.55	2.46	3.46	1.87	3.07	4.41
RCP 8.5	0.92	1.59	2.45	2.39	3.64	4.81	4.51	6.14	8.02

Table 4 Annual precipitation (mm) changes (%) under RCP 4.5 and RCP 8.5 scenarios

Emission scenario	**2011-2040**			**2041-2070**			**2071-2100**		
	min	mean	max	min	mean	max	min	mean	max
RCP 4.5	-9.91%	+3.01%	+17.78%	-17.31%	+1.03%	+18.62%	-24.25%	+1.74%	+22.11%
RCP 8.5	-7.85%	+2.70%	+23.54%	-18.04%	+0.99%	+20.62%	-34.24%	-2.31%	+20.41%

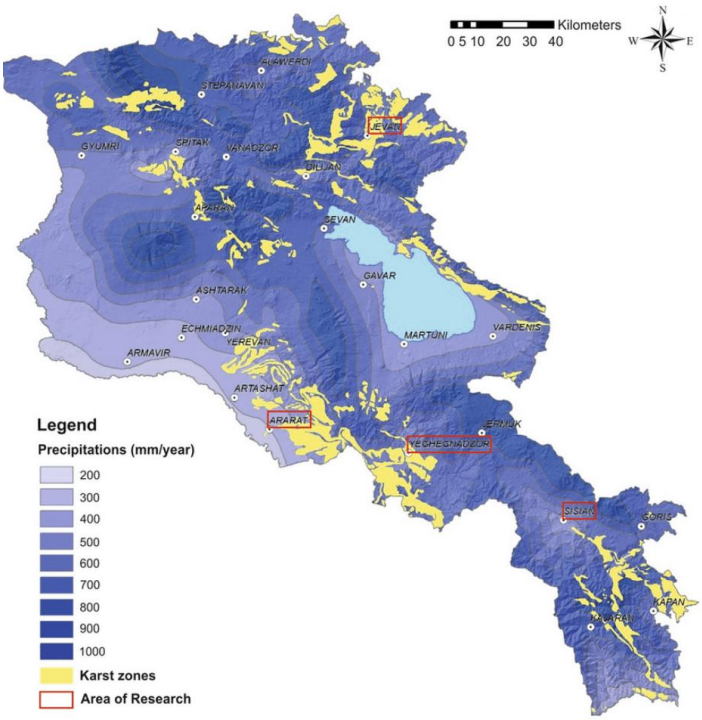
Exposure to Climate Hazards and Climate-Induced Loss and Damage

14. Based on Armenia's historical data on droughts, flooding and other natural disasters, rural low-income communities face heightened vulnerability to climate change impacts due to water scarcity, increased health risks, and declining agricultural yields.

15. **Hydrological events:** In the last few decades, floods and mudflow have threatened half of Armenia. In 2003, a significant flooding event occurred in the Tavush marz when its four rivers overflowed due to the excessive amount of mountain snow

[13] SMHI-WMO Climate Information Portal.
[14] GCF Climate Information Portal.
https://ssr.climateinformation.org/ssr?lat=40.173966&lng=44.502747&scenario=rcp45&period=p3

affecting 5,000 people and causing one fatality[15] More recently, the Debed River flood (May 2024) affected 30,000 people in the Lori and Tavush marzes following heavy precipitation levels the previous day. This sudden event caused significant damage to homes, businesses, livestock and infrastructure.[16] Between 2004 and 2007, mudflows damaged around 200 towns and 600 spots on main roads. In recent years, these mudflows have cost an average of $2.9 million each year.[17] Additionally, hailstorms are a frequent occurrence. In 2023, the those in the Syunik, Shirak, Lori, and Tavush marzes (rural communities in particular) experienced heavy hailstorms causing disruptions to water supplies and sewage systems.[18] The highest number of hailstorms is typically observed in the Shirak plain, whilst the highest number of frost phenomenon occurs in Ararat's valley and foothills. In 2020, a heavy hailstorm affected the city of Gyumri in Shirak causing blocked sewage systems and flooding streets affecting 1,000 households- a magnitude not seen in 170 years.[19] In 2017, Aragatsotn lost 5,712 ha of crops due to hail, floods and frosts, followed by Shirak (3,177 ha) and Syunik (2,350 ha). Armenia also has 2,500 landslide-prone sites—4.1% of its territory - placing 15% of the population at risk[20], with 14 landslides recorded in 2016. The 2024 flash floods affected 15 villages in Lori and Tavush, damaging livestock, homes and livelihoods.[21].

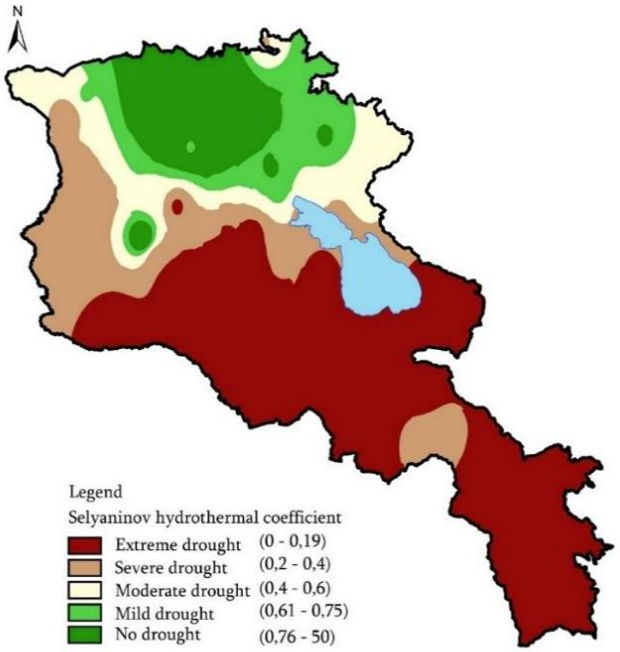


Map 2 Map of precipitation and likely high flood zones during three survey campaigns (2016,2017,2018)[22]

16. **Droughts:** Warm and dry conditions have increased across Armenia. Between 2000-2017, days with strong to very strong drought rose by 33 days, .[23]with drought zones expanding into mountainous areas and occurring earlier each

[15] ReliefWeb. 2003. https://reliefweb.int/report/armenia/armenia-severe-flooding-hits-tavush-region-armenia
[16] ReliefWeb. 2024. https://reliefweb.int/report/armenia/armenia-floods-2024-dref-operational-update-mdram013
[17] Republic of Armenia. 2022. ARMENIA:MID-TERM REVIEW OF THE IMPLEMENTATION OF THE SENDAI FRAMEWORK FOR DISASTER RISK REDUCTION 2015-2030.
[18] ReliefWeb. 2023. https://reliefweb.int/disaster/st-2023-000106-arm
[19] International Rederation of the Red Cross and Red Crescent Societies. 2020. Operation Update Report Armenia: Hailstorm.
[20] National Communication on Climate Change under the UNFCCCC.
[21] ReliefWeb. 2024. https://reliefweb.int/disaster/ff-2024-000087-arm
[22] Ruggieri, R et al. 2022. Armenian karst project. Carbonates and Evaporites, 37(1).
[23] Ibid.

year.[24] Declining precipitation has reduced freshwater availability. The 2000–2001 drought affected 297,000 people, causing USD 143 million in losses.[25]



Map 3 Meteorological drought assessment from June 2021t on the base of Hydrothermal Coefficient of Selyaninov, source: WMO, 2023[26]

17. Further climate science evidence and hazard analysis are provided in Annex 2 (Feasibility Study).

Status of Early Warning System in Armenia

18. **Global EWS:** EWS are fundamental to DRR as emphasized in the Sendai Framework and SDGs. The global implementation of EWS has contributed to a decline in disaster-related deaths as well as prevent ecosystem and infrastructure damage.

    Armenia Meteorological Observation Network: Armenia has several meteorological monitoring channels which consist of 45 Manual Meteorological Stations; 49 Automatic Stations; 38 Agrometeorological Stations; 3 Actinometric Stations; 1 Aerological Station (one in Yerevan that carries out observations once a day and it is included in WMO's global climate observation network); 1 atmospheric ozone; and 20 gamma radiation systems.[27] For detailed information on Armenia's meteorological observation network, see Annex 2 – Feasibility Study (Section 5.5.1 / Output 1.1). Armenia is also a part of the UN EWS4All initiative[28].
19. **EWS responsibilities & existing hydrological & metrological stations:** In terms of hydrological monitoring, Armhydromet's hydrological monitoring observation network features 91 hydrological observation stations, of which

[24] Country Water Partnership Armenia and Global Water Partnership Central and Eastern Europe. 2021-2022. Integrated Drought Management in Armenia & Azizyan, H. et al. 2023. Analysis of drought conditions in Armenia in June 2021 using observational and satellite data. Proceedings of the YSU C: Geological and Geographical Sciences, 57(3(261).
[25] Republic of Armenia. 2022. ARMENIA:MID-TERM REVIEW OF THE IMPLEMENTATION OF THE SENDAI FRAMEWORK FOR DISASTER RISK REDUCTION 2015-2030.
[26] South Caucasus Early Warnings for All Event. 2023. chrome-extension://efaidnbmnnnibpcajpcglclefindmkaj/https://wmo.int/sites/default/files/2023-12/Armenia_EARLY%20WARNINGS%204%20ALL-Geneva%2014-15%20December%202023%20%282%29.pdf
[27] South Caucasus Early Warnings for All Event. 2023. chrome-extension://efaidnbmnnnibpcajpcglclefindmkaj/https://wmo.int/sites/default/files/2023-12/Armenia_EARLY%20WARNINGS%204%20ALL-Geneva%2014-15%20December%202023%20%282%29.pdf
[28] The Early Warnings for All initiative aims to ensure universal protection from hazardous hydrometeorological, climatological and related environmental events through life-saving early warning systems by the end of 2027, see https://wmo.int/activities/early-warnings-all/wmo-and-early-warnings-all-initiative

monitor 80-riverines; 2-onchannels; 5-reservoirs; and 4 lake stations.[29] Twice-daily observations include water and air temperature, water levels, water discharge and ice phenomena. For each station, there are various regression models for forecasting spring flood period flows, ten-day average discharges, monthly discharges, and maximum discharges of water. For flash flood forecasting, the Black Sea Middle East Flash Flood Guidance System (BSMEFFG) is used.

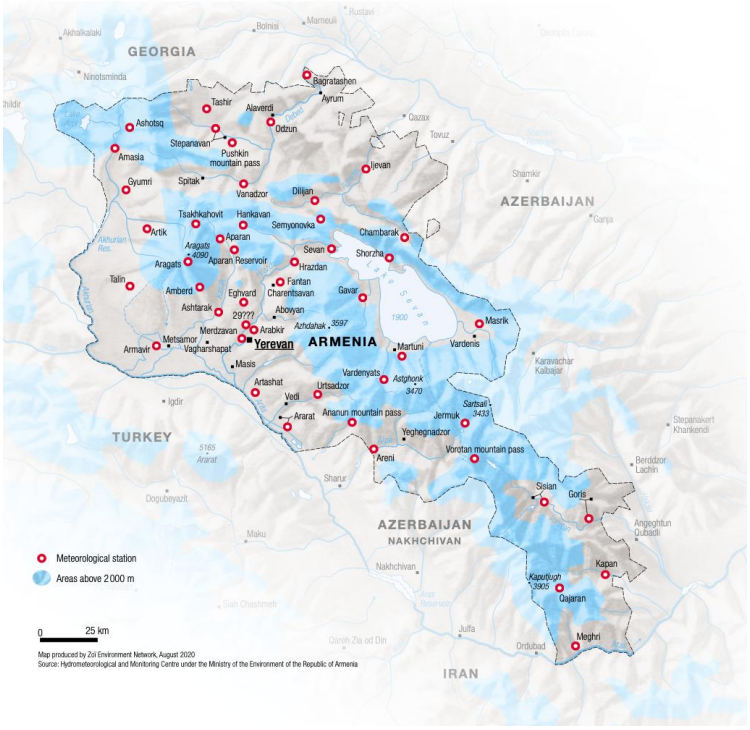


Figure 1 Meteorological monitoring networks in Armenia, Source: NFCS

20. **The need for MHEWS in Armenia:** Armenia's exposure to rapidly intensifying climate hazards—particularly floods, flash floods, droughts, hailstorms, and landslides—requires a shift from hazard-based alerts to a fully operational impact-based MHEWS. The country's mountainous terrain, steep river basins, and climate-sensitive agricultural zones heighten the impacts of extreme events, as evidenced by the 2024 Debed River flood and recurrent hailstorms. Current systems are constrained by aging observation infrastructure, fragmented data networks, limited spatial coverage, and insufficient modelling capacity. Forecasting remains heavily dependent on external datasets that are not tailored to Armenia's topography, reducing the precision of localized hazard detection and creating operational vulnerabilities during high-impact weather events.

21. Without this project, these systemic gaps will persist. Armenia would continue operating with outdated radar and upper-air systems, insufficient hydrological monitoring, and forecasting tools that cannot capture local hazard dynamics. Early warnings would remain less precise and slower to reach at-risk communities, constraining early action by emergency responders. As climate extremes intensify, the absence of modern monitoring, modelling, and dissemination capabilities would lead to increased socio-economic losses and continued dependence on external data sources.

22. A modern MHEWS is therefore essential to translate meteorological and hydrological forecasts into location-specific, sector-specific, and behavior-triggering alerts. Strengthening impact-based forecasting, integrating hydrometeorological and disaster-management systems, and improving last-mile communication will enable communities, farmers, and emergency responders to take early protective actions. A full technical justification for this investment, covering hazard analysis, modelling gaps, and expected resilience gains—is presented in the Feasibility Study (Annex 2).

[29] Ibid.

23. However, Armenia's current observation infrastructure remains inadequate for modern early warning operations. The two existing radars, installed about 40 years ago, rely on outdated MRL-5 technology and no longer meet WMO requirements for accurate precipitation estimation, hail detection, or Doppler wind measurements. Their limited coverage leaves large portions of the country (particularly western, central, and southern mountainous regions) without reliable surveillance. Upper-air capacity is similarly limited: the single radiosonde station in Yerevan performs only one sounding per day due to obsolete equipment, providing insufficient atmospheric data for initializing high-resolution NWP models and supporting aviation meteorology.

24. To close these gaps, the project will install Armenia's first modern solid-state C-band dual-polarization Doppler radar at the Amberd meteorological station, significantly improving detection of hail, heavy precipitation, and severe convective systems, and extending national coverage. In parallel, the upper-air station will be modernized through automated radiosonde launches and continuous real-time data transmission, restoring compliance with WMO Global Observing System standards. Together, these upgrades form foundational elements of Armenia's transition to a fully operational, impact-based MHEWS. Detailed technical specifications and coverage analyses are provided in Annex 2.

Projects / programmes of complementarity or synergy

25. The following table identifies the relevant EWS projects in Eastern Europe.

Project / programme name	Year	Synergies and opportunities
'Support to National Disaster Preparedness' Armenia[30] Client: UNDP USD 2.18 million	2003-2019	This project aimed to strengthen Armenia's national and local disaster preparedness systems to better prepare for, mitigate, and respond to natural, technological, and public health hazards. This project is synergetic with the proposed project as both projects aim to enhance Armenia's resilience to climate change-driven natural hazards. They each work towards reducing the vulnerability of communities and infrastructure. Additionally, both projects operate within the framework of Armenia's National Adaptation Plan (NAP). This ensures that their activities are aligned with national priorities and contribute to long-term climate adaptation goals.
Glacier to Farm (G2F) Initiative[31] Client: ADB USD 250 million	2025 (approved)-ongoing	G2F initiative is a regional programme designed to strengthen climate resilience in Central and West Asia by improving the use of climate, cryosphere, and hydrological information for agriculture, water management, and food security. At present, there are no confirmed G2F sub-projects under implementation in Armenia. Accordingly, there is no overlap between the proposed GCF-financed project and any ADB/G2F-supported activities in Armenia. The proposed project instead focuses on establishing core national capacities (modernized observation infrastructure, high-resolution forecasting, impact-based early warning services, and institutional coordination mechanisms) that would enable effective uptake of future ADB or G2F investments, should such initiatives be developed. It will actively coordinate with ADB and any future G2F implementation teams through technical dialogue, information sharing, and alignment of climate

[30] UNDP. Support to National Disaster Preparedness. https://open.undp.org/projects/00011263
[31] ADB. G2F Initiative. https://www.greenclimate.fund/project/fp283

		and hydrological services. This coordination will be facilitated through Armhydromet's mandate as Armenia's national hydro-meteorological service and through the National Framework for Climate Services, ensuring complementarity, avoidance of duplication, and coherence with regional climate-resilience initiatives.
'Strengthening Climate Information and Multi-Hazard Early Warning Systems for Increased Resilience in Azerbaijan'[32] Client: UNEP/ GCF USD 35.1 million	2024 (approved)-ongoing	This project promotes climate hazard awareness to enhance early warning communication and disaster preparedness. This project will empower Azerbaijan with better climate information and warnings through enhanced data collection and a new weather forecasting system. This SAP project strengthens national forecasting, nationwide climate-service delivery, and IBF protocols that closely mirror Armenia's planned MHEWS upgrades. Its focus on institutionalizing NFCS functions and improving uptake of climate information provides valuable structural lessons for Armenia's own NFCS established under Component 1.
'ALBAdapt – Climate Services for a Resilient Albania'[33] Client: GIZ/ GCF USD 35.5 million	2024 (approved)-ongoing	ALBAdapt focuses on nationwide MHEWS modernization, integration of hydromet forecasting with civil protection systems, and strengthening last-mile communication for rural and mountainous communities – challenges highly relevant to Armenia. Albania's model for coordinating forecasting agencies with emergency responders can guide Armenia's institutional arrangements with Armhydromet and the Ministry of Internal Affairs. Lessons on inclusive communication protocols and telecom engagement can support Armenia's last-mile dissemination work, while Albania's approach to sustainable O&M budgeting offers guidance for integrating future EWS costs into Armenia's national budget.
'Strengthening Moldova's Disaster Risk Management and Resilience Project'[34] Client: World Bank USD 40 million	2024 (approved)-ongoing	This project strengthens Moldova's ability to prepare for, respond to, and effectively recover from natural hazards, climate shocks, and eligible crises. In conjunction with this project, the EWS Armenia project also supports the strengthening of the state hydrometeorological services as well as meteorological and hydrological monitoring networks, enhance forecast warnings and deliver relevant policy frameworks to support DRR.
'Scaling up climate resilient flood risk management in Bosnia and Herzegovina'[35]	2023 (approved)-ongoing	This project establishes an integrated, gender-responsive approach to climate-resilient flood risk management (FRM), strengthening national capacity for long-term flood risk strategies.

[32] GCF. SAP046. https://www.greenclimate.fund/project/sap046
[33] GCF. SAP041. https://www.greenclimate.fund/project/sap041
[34] World Bank. P504278. https://projects.worldbank.org/en/projects-operations/project-detail/P504278
[35] GCF. FP216. https://www.greenclimate.fund/project/fp216

Client: UNDP/ GCF USD 72.7 million		This project compliments the current EWS Armenia project as it is in line with the UN's "Early Warnings for All" initiative, aiming to strengthen emergency response mechanisms, climate data utilization, early warnings, and flood forecasting in order to reduce climate-related loss and damage.
'Scaling-up Multi-Hazard Early Warning System and the Use of Climate Information in Georgia'[36] Client: UNDP/ GCF USD 70.3 million	2018 (approved)-ongoing	This project will transform climate risk reduction and management in Georgia by developing and implementing a fully integrated, impact-based MHEWS system. The project's work on radar integration, AWS expansion, and IBF workflows provides directly relevant methodological and technical parallels for Armenia's Components 1 and 2. Armenia can draw on Georgia's experience with maintaining monitoring systems in complex terrain, developing IBF matrices, and improving municipal preparedness. Georgia's inter-agency cooperation model also offers practical insights for strengthening Armenia's NFCS, PSC functions, and coordination with the Ministry of Internal Affairs.
'Developing Climate Resilient Flood and Flash Flood Management Practices to Protect Vulnerable Communities of Georgia'[37] Client: UNDP/AF USD 5,316,500	2012-2017	To address the anticipated increase in floods, landslides, flash-floods, and mudflows, this project supported the governments and communities of the Rioni River Basin in developing adaptive capacity and establishing a floodplain development policy Connecting the various activities in the EWS Armenia project, this project delivered hazard maps, integrated climate change risks into floodplain management and spatial planning, and provided climate risk management training to local authorities. This project also included the design of flood management practices and established flood EWS.

Barriers to disaster risk management

26. Despite currently identifying climate-related risks and hazards to ensure the safety and protection of communities, infrastructure, and assets, Armenia still faces barriers to effective EWS and DRR. The Feasibility Study (Annex 2) provides a breakdown of these barriers.

Table 5 Main DRM barriers and project interventions

Barrier type	Description	How the project overcomes this barrier
Financial barrier	Limited funding and budgets available to implement / upgrade hydrological and meteorological technologies and services	A needs assessment will be conducted to identify financing gaps for MHEWS and Climate DRR. Financing mechanisms, such as forecast-based financing, will ensure coverage is

[36] GCF. FP068. https://www.greenclimate.fund/project/FP068
[37] Adaptation Fund. https://www.adaptation-fund.org/project/developing-climate-resilient-flood-and-flash-flood-management-practices-to-protect-vulnerable-communities-of-georgia/

Market barrier:	Limited investment capacity and incentives to further early warning and DRR support.	accessible to vulnerable communities The project will lay the groundwork for potential private sector participation in EWS infrastructure and services. Connects to Activity 3.1 Identify Financing Gaps and Develop Innovative Solutions
Technical barrier	Armenia's meteorological and hydrological observation infrastructure is outdated, largely manual, and fragmented, resulting in limited data accuracy, timeliness, and spatial coverage for effective early warning and forecasting.	The implementation of this project will address the technical barriers caused by Armenia's ageing meteorological and hydrological infrastructure, which currently limits the accuracy, timeliness, and spatial coverage of climate data. Most observation stations rely on manual data collection, outdated sensors, and fragmented transmission systems, resulting in delays and data gaps that undermine reliable forecasting. Upgrading to automated weather and hydrological stations, introducing digital data transmission and processing systems, and rehabilitating the upper-air observation network will ensure continuous, high-quality data for real-time analysis. In parallel, the integration of modern forecasting models, including nowcasting and high-resolution NWP, will significantly improve the precision of hazard detection and enable impact-based early warnings tailored to community needs. Connects to Activity 1.1 Upgrade and expand hydro-meteorological monitoring infrastructure
	Limited access to EWS infrastructure and inadequate training for monitoring and responding to climate data hinder timely mobilization against upcoming hazards.	This will strengthen emergency preparedness and response capacities by engaging the Emergency Response Centre to provide guidance when a disaster strikes, particularly for vulnerable communities. Connects to Activity 2.2 Enhance Preparedness and Response Capabilities.
Capacity, knowledge, and awareness barrier	Limited knowledge and quality of climate data, forecasts and knowledge databases for communities.	This project will strengthen knowledge and communication systems, containing the most up-to-date hydrological information required for disaster preparedness. Through the integration of early warning dissemination databases, the country will not only be more equipped to prepare for natural disasters but will also be familiar with climate-related jargon and meteorological data. Connects to Activity 1.2 Modernize Data Systems for Hazard Modelling and Capacity Building; Activity 1.3 Develop Quality Management System and Certification; Activity 2.1 Strengthen Inclusive Early Warning Dissemination and Communication Systems; Activity 3.2 Share Lessons and Best Practices Regionally and Globally
Institutional barrier	Limited coordination and information sharing between Government departments and non-government agencies responsible for EWS; Limited government capacity	This project will strengthen governmental coordination and capacity through the establishment of the National Framework for Climate Services to allow integration of EWS and DRR into the national and regional development policies.

		Connects to Activity 1.4 Establish National Framework for Climate Services and Policy Integration

B.2.1. Project/Programme description (max. 1,000 words)

- **Goal Statement:** IF Armenia's multi-hazard early warning systems are modernized, integrated, and supported by strong institutional capacities, data infrastructure, forecasting capability, and dissemination mechanisms, THEN national and local stakeholders, including vulnerable communities, will be able to anticipate, prepare for, and respond effectively to climate-induced hazards, BECAUSE they will have access to timely, reliable, and impact-based forecasts, delivered through improved monitoring, modelling, policy frameworks, and community-centered, inclusive communication channels, reducing exposure and vulnerability to climate-related hazards.

- This project aims to enhance climate resilience providing more reliable weather, climate, and hydrological information. It targets around 1.07 million direct and 1.9 million indirect beneficiaries, including vulnerable rural communities at risk from climate-induced hazards. The approach combines the principles articulated in the "Early Warnings for All" initiative and in the Global Framework for Climate Services (GFCS) with a value-chain approach, upgrading the early warning system and strengthening Armhydromet. By establishing MHEWS and strengthening communication with end-users, the project aims to reduce risks and increase resilience to climate-induced hazards.

- Conceptual Framework of the Intervention: The project's conceptual framework is fully aligned with the Early Warnings for All (EW4All) initiative and the GFCS. The intervention is structured around strengthening the four EW4All pillars (risk knowledge, monitoring & forecasting, warning dissemination, and preparedness & response) and the five GFCS components (user interface, observations, modelling, forecasting, service delivery, and capacity development).

- The project is organized into three mutually reinforcing components that together establish an end-to-end, people-centred multi-hazard early warning and early action system fully aligned with the EW4All initiative. Component 1 strengthens Armenia's technical foundation for early warning by modernizing the national observation network, introducing high-resolution modelling and data-management systems, and institutionalizing WMO-compliant quality processes. These investments correspond to EW4All Pillar 2 (Monitoring, Forecasting and Detection) and the GFCS pillars on Observations, Modelling, and Climate Services Information Systems, ensuring that Armenia can generate accurate, timely and locally relevant hazard information.

- Component 2 ensures that the enhanced climate and hazard information produced under Component 1 reaches users in a clear, actionable, and inclusive manner. It introduces national warning protocols based on the Common Alerting Protocol, strengthens multi-channel dissemination systems, establishes user-feedback and verification mechanisms, and enhances preparedness capacities of national and local authorities. Localized risk and vulnerability assessments further ensure that early warnings translate into practical early action for diverse population groups. These measures align with EW4All Pillars 1, 3 and 4 by improving risk knowledge, enabling accessible and reliable warning dissemination, and strengthening preparedness and response capacities.

- Component 3 provides the institutional, analytical, and financial enabling environment required to sustain and expand the early warning system over time. It lays the groundwork for anticipatory action through risk-based trigger methodologies and early action protocols, establishes MEAL systems for evidence-based refinement of operations, and promotes innovation, applied research, and regional knowledge exchange. Public–private engagement frameworks and a demonstration insurance pilot further strengthen long-term resilience financing options. These functions reinforce the GFCS pillars on Capacity Development and User Interface Platforms, ensuring that the system remains adaptive, evidence-driven, and connected to user needs.

- Together, the three components form a coherent and integrated structure where Component 1 generates high-quality climate and hazard information; Component 2 ensures this information is delivered, understood and acted upon; and Component 3 embeds sustainability, innovation, and future financing pathways. This structure reflects the full value chain envisioned under the EW4All global framework, ensuring that Armenia's early warning capability is technically robust, operationally effective, and institutionally sustainable.Visualization of the alignment between the project structure and the EW4All programme structure is presented in the table under section of the Annex 2.

Theory of Change Diagram

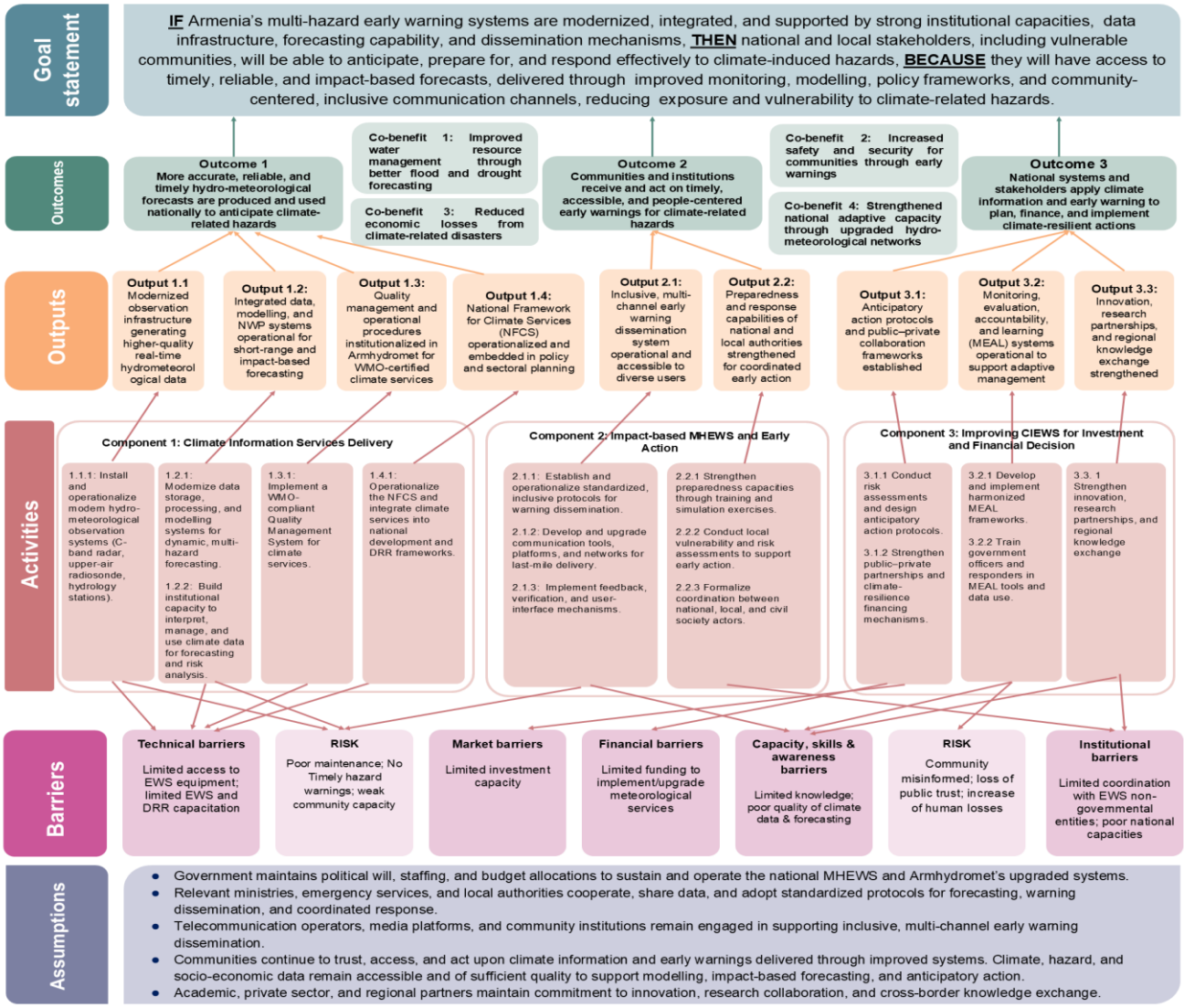


Figure 2 Theory of Change diagram

This section outlines key components of the projects and provides an overview of the proposed intervention. Please refer to the Annex 2 Feasibility Study, Annex 2 for detailed elaboration of the scope of project interventions and Section 5.6 for details on the conceptual framework of the proposed activities and how they are situated within the four pillars of MHEWS.

Component 1: Climate Information Services Delivery

Outcome 1: More accurate, reliable, and timely hydro-meteorological forecasts are produced and used nationally to anticipate climate-related hazards

Output 1.1 Modernized observation infrastructure generating higher-quality real-time hydrometeorological data.

- Activity 1.1.1 Install and operationalize modern hydro-meteorological observation systems (C-band radar, upper-air radiosonde, hydrology stations).

  This activity upgrades Armenia's core observation capabilities by replacing outdated radar and upper-air systems and strengthening the hydrological network. The investments close critical data gaps identified in Annex 2. Feasibility Study and enable real-time, high-quality data streams needed for forecasting and modelling.

  • Install a C-band dual-polarization Doppler radar at Amberd

• Modernize the upper-air radiosonde system with automated launches
• Upgrade priority hydrological stations with automated sensors and telemetry
• Integrate radar, hydrology, and upper-air feeds into national data systems

- **Output 1.2** Integrated data, modelling, and NWP systems operational for short-range and impact-based forecasting.

- Activity 1.2.1 Modernize data storage, processing, and modelling systems to support dynamic, multi-hazard forecasting.

  This activity consolidates all observational inputs into an integrated modelling environment, enabling high-resolution NWP, hazard-specific modules, and nowcasting functions consistent with FS recommendations.

  • Establish centralized high-availability data architecture
  • Deploy HPC environment to support high-resolution NWP and hazard models
  • Integrate radar, upper-air, hydrological, and satellite data streams
  • Institutionalize QA/QC routines and data governance procedures

- Activity 1.2.2 Build institutional capacity to interpret, manage, and use climate data for forecasting and risk analysis.

  Training develops the institutional skills needed to interpret upgraded model outputs, operate HPC infrastructure, and apply hazard-specific forecasting tools.

  • Training on radar and upper-air interpretation
  • Capacity-building on NWP workflows and modelling tools
  • Exercises to strengthen operational forecasting procedures

- **Output 1.3** Quality management and operational procedures institutionalized in Armhydromet for WMO-certified climate services.

- Activity 1.3.1 Implement a WMO-compliant Quality Management System for climate services.

  A Quality Management System covering observations, modelling, forecasting, and data exchange is introduced to standardize operations and ensure compliance with WMO frameworks.

  • Develop SOPs, calibration procedures, documentation standards
  • Strengthen calibration laboratory functions
  • Conduct internal audits and verification routines

- **Output 1.4** National Framework for Climate Services (NFCS) operationalized and embedded in policy and sectoral planning.

- Activity 1.4.1 Operationalize the NFCS and integrate climate services into national development and DRR frameworks.

  This activity operationalizes the NFCS by formalizing governance structures, building a digital platform, and embedding climate services into planning instruments.

  • Establish NFCS steering and technical working groups
  • Develop national climate-services policy and operational guidelines
  • Create a digital NFCS platform for products, feedback, and co-production
  • Support integration of climate information into selected national planning processes

<u>Component 2: Impact-based MHEWS and Early Action</u>

Outcome 2: Communities and institutions receive and act on timely, accessible, and people-centered early warnings for climate-related hazards.

- **Output 2.1** Inclusive, multi-channel early warning dissemination system operational and accessible to diverse users.

- Activity 2.1.1 Establish and operationalize standardized, inclusive protocols for warning dissemination.

  This activity develops CAP-compliant warning templates and embeds standardized issuance and dissemination workflows across agencies and communication channels.

  • Introduce national Common Alerting Protocol (CAP) standard
  • Develop hazard-specific CAP templates and severity/color-code system
  • Formalize SOPs for validation, issuance, and communication workflows
  • Harmonize protocols across telecom, media, and government systems

- Activity 2.1.2: Develop and upgrade communication tools, platforms, and networks for last-mile delivery.

  Feasibility Study recommendations guide upgrades to digital, broadcast, and telecom channels to ensure redundancy and broad accessibility.

  • Improve SMS, mobile app, and digital platforms for alerts
  • Strengthen radio/TV and loudspeaker systems for remote areas
  • Deploy dashboards for real-time monitoring of dissemination
  • Ensure accessibility formats (audio/visual, simplified messages)

- Activity 2.1.3: Implement feedback, verification, and user-interface mechanisms.

  Mechanisms are created to monitor warning performance and incorporate user input into product design.

  • Operate National Climate Outlook Forum and user-dialogue groups
  • Establish systems for feedback and verification of alerts
  • Adapt warning formats based on user inputs

- **Output 2.2** Preparedness and response capabilities of national and local authorities strengthened for coordinated early action.

- Activity 2.2.1: Strengthen preparedness capacities through training and simulation exercises.

  Authorities at national and regional levels are trained to interpret warnings, activate preparedness measures, and coordinate responses.

  • Training on interpretation of impact-based warnings
  • Multi-agency drills and simulations
  • Refinement of SOPs based on lessons learned

- Activity 2.2.2: Conduct local vulnerability and risk assessments to support early action.

  This activity will develop local risk profiles and early-action triggers aligned with forecast-based action methodologies, informed by engagement with local communities. These insights will support the design of community-based disaster risk reduction strategies tailored to the hazards and social contexts of each marz

  • Prepare community-level risk and exposure profiles
  • Identify hazard-specific early action triggers
  • Integrate risk information into preparedness and contingency plans

- Activity 2.2.3 Formalize coordination between national, local, and civil society actors.

  This activity strengthens Armenia's ability to take coordinated early action by clarifying institutional roles, establishing structured information flows, and embedding early-warning and early-action procedures into national and local DRM systems. A unified coordination framework will be developed and adopted, aligning Armhydromet's forecasting workflows with the Crisis Management National Center (CMNC), regional authorities, and community-level actors. Digital tools and existing platforms will be used to support harmonized access to hazard information and preparedness protocols.

• Develop a Unified Emergency Coordination Framework defining roles, decision flows, communication channels, and activation timelines
• Establish routine coordination processes between Armhydromet, CMNC, and regional/municipal authorities
• Formalize participation of civil society groups in preparedness, communication, and drills
• Integrate hazard maps, risk profiles, and early-action protocols into CMNC's digital systems

Component 3: Improving CIEWS for Investment and Financial Decision

Outcome 3: Institutionalized anticipatory action, innovation, and learning systems enabling future resilience financing.

- **Output 3.1** Anticipatory action foundations and public–private engagement frameworks established.

- Activity 3.1.1 Conduct risk assessments and design anticipatory action protocols

  This activity establishes Armenia's evidence base for anticipatory action by conducting comprehensive risk assessments, developing a national Anticipatory Action Roadmap, and formulating Early Action Protocols. The assessments integrate hazard modelling, vulnerability analysis, and local knowledge to define triggers and seasonal risk patterns. The roadmap sets institutional roles, operational procedures, and scale-up pathways, while Early Action Protocols translate these into actionable, hazard-specific procedures tested through exercises.

  • Produce Anticipatory Risk Profiles for each marz using hazard models, vulnerability analysis, and local knowledge
  • Develop a national Anticipatory Action Roadmap with trigger methodologies, decision rules, and institutional arrangements
  • Co-develop hazard-specific Early Action Protocols defining triggers, predefined actions, and communication workflows
  • Test protocols through simulations and refine them for national adoption

- Activity 3.1.2 Strengthen public–private partnerships and climate-resilience financing mechanisms

  This activity establishes frameworks and pilots that enable private-sector engagement in climate-risk management. It develops national cooperation models, supports data-sharing protocols, and implements a de-risked weather-index insurance pilot to validate feasibility and generate evidence for scale-up. A PPP Implementation Toolkit will codify templates, risk-sharing models, and institutional arrangements.

  • Develop a national PPP and climate-risk finance framework for cooperation with insurers, telecoms, banks, and data providers
  • Implement a weather-index insurance pilot using radar/NWP datasets and actuarial modelling
  • Design de-risked product testing processes: trigger definition, awareness, enrolment, and digital claims verification
  • Produce a PPP Implementation Toolkit with institutional templates and policy recommendations

- **Output 3.2** Monitoring, Evaluation, Accountability and Learning (MEAL) systems operational to support adaptive management.

- Activity 3.2.1 Develop and implement harmonized MEAL frameworks.

  This activity establishes an integrated MEAL framework tailored to MHEWS and anticipatory action. It harmonizes indicators, reporting responsibilities, and analytical routines across national and municipal institutions, and embeds after-action review processes to drive adaptive management.

  • Define indicators for warning performance, activation thresholds, inclusion, and preparedness actions
  • Establish reporting flows, verification mechanisms, and standard review templates
  • Develop digital dashboards for visualization of key indicators
  • Integrate the framework into NFCS and anticipatory-action governance structures

- Activity 3.2.2 Train government officers and responders in MEAL tools and data use.

This activity builds institutional capacity to apply MEAL tools, interpret data for operational decisions, and document lessons. It uses a Training-of-Trainers model and partners with universities to embed MEAL concepts in academic curricula. Learning outputs will be synthesized into annual reports and policy briefs.

• Deliver training on interpreting MEAL indicators, validating triggers, and analyzing operational reviews
• Provide tools for documenting preparedness actions, community feedback, and response outcomes
• Produce MEAL reports and policy briefs supporting national decision-making
• Develop community-friendly knowledge products

- **Output 3.3** Innovation, research partnerships, and regional knowledge exchange strengthened

- Activity 3.3.1 Strengthen innovation, research partnerships, and regional knowledge exchange.

This integrated activity creates a national innovation environment, formalizes applied research partnerships, and enables structured regional cooperation with GCF EWS programs in Georgia and Azerbaijan and global platforms such as WMO networks and the Anticipation Hub.

• Operate a national innovation platform for forecasting tools, communication interfaces, and preparedness applications
• Support applied research on risks, vulnerability, early warning uptake, and cost–benefit analysis of early action
• Update university curricula and build long-term specialist pipelines
• Facilitate regional exchanges, cross-border learning, and dissemination of lessons through case studies and digital products

B.2.2. Outcome mapping to GCF results areas and co-benefits categorization

Outcome number	GCF Mitigation Results Area (MRA 1-4)				GCF Adaptation Results Area (ARA 1-4)			
	MRA 1 Energy generation and access	**MRA 2** Low-emission transport	**MRA 3** Building, cities, industries, appliances	**MRA 4** Forestry and land use	**ARA 1** Most vulnerable people and communities	**ARA 2** Health, well-being, food and water security	**ARA 3** Infrastructure and built environment	**ARA 4** Ecosystems and ecosystem services
Outcome 1	☐	☐	☐	☐	☒	☒	☒	☐
Outcome 2	☐	☐	☐	☐	☒	☒	☐	☐
Outcome 3	☐	☐	☐	☐	☒	☐	☒	☐

Co-benefit number	Co-benefit					
	Environmental	**Social**	**Economic**	**Gender**	**Adaptation**	**Mitigation**
Co-benefit 1. - Improved water resource management through better flood and drought forecasting	☒	☐	☐	☐	☒	☐
Co-benefit 2. - Increased safety and security for communities through early warnings	☐	☒	☐	☐	☒	☐
Co-benefit 3. - Reduced economic losses from	☐	☐	☒	☐	☒	☐

climate-related disasters (e.g., agricultural damage, infrastructure losses)						
Co-benefit 4. - Strengthened national adaptive capacity through upgraded hydro-meteorological networks	☒	☐	☒	☐	☒	☐

B.3. Implementation / institutional arrangements (max. 750 words)

The project will be implemented under a clear institutional and governance structure that ensures efficiency, accountability, and strong country ownership. The implementation structure builds on Armenia's existing national mechanisms for climate action and disaster risk reduction, involving two key government institutions as the Accredited Entity (AE) and Executing Entities (EEs).

The Accredited Entity for this project is the Environmental Project Implementation Unit State Agency (EPIU). EPIU will be responsible for overall project oversight, fund management, monitoring and reporting to the GCF. As a National Implementing Entity for the Republic of Armenia accredited to the GCF, EPIU has the fiduciary capacity to manage grants, procure services, and ensure compliance with the Fund's standards and policies.

Two Executing Entities will be responsible for the day-to-day execution of project activities:

The "Hydrometeorology and Monitoring Center" State Non-Commercial Organisation is Armenia's national hydro-meteorological service and the primary authority responsible for meteorological observations, hydrological monitoring, weather and climate forecasting, and the provision of climate information services. The institution operates the national observation network, including radar, surface, upper-air, and hydrological stations, and manages data processing, modelling, and climate-service delivery in line with WMO standards.

The main activity and objectives of Armhydromet include:

- Promoting the rational use of the components of the environment – atmospheric air, water resources, flora and fauna, including specially protected areas of nature and forests, protection of lands and subsoil, and natural resources (excluding mineral resources) by observing the components of the environment and the factors affecting them; creating registering, analyzing, distributing and maintaining sufficient data to assess the situation, as well as through climate monitoring, science-based analysis and assessment of climate change;
- Receiving information describing the state of hydrometeorological elements (atmospheric pressure, wind, humidity, air and water temperature, water level and charge, flood, freezing, etc.) and processes, by conducting observations, surveying received information, using, providing, maintaining, assessing and forecasting the situation, as well as ensuring the organization and implementation of works of active influence on atmospheric phenomena and radar observations in the territory of the Republic of Armenia.

Armhydromet's technical mandate and operational expertise make it the most suitable entity to execute the activities under Components 1 and 2, which focus on modernizing observation systems, strengthening modelling and forecasting capacities, institutionalizing quality management processes, and operationalizing the National Framework for Climate Services. Under the project, Armhydromet will lead all technical implementation related to infrastructure upgrades, data and modelling systems, climate-service delivery, and the development of impact-based forecasting products, working in close coordination with the Ministry of Environment and the national emergency management authorities. As Armenia's national hydro-meteorological service, Armhydromet will also be responsible for the routine operation and maintenance of national observation, forecasting, and early warning systems, with operation and maintenance costs covered through its annual state budget allocations in line with national public-finance procedures.

EPIU itself will also act as the Executing Entity for Output 3, which focuses on anticipatory action protocols, MEALs, as well as exploring resilience financing mechanisms and facilitating public-private partnerships.

Each Executing Entity will be responsible for managing the technical delivery of assigned activities, contracting services, conducting procurements under national and GCF procurement guidelines, ensuring environmental and social safeguards compliance, and financial reporting to the AE (EPIU). Further description of the functions of each entitiy as an EE is provided in Annex 2.

Legal and Contractual Arrangements

- Prior to the commencement of the project implementation Subsidiary Agreement will be concluded between the EPIU, acting in its capacity as the AE, and the Armhydromet, designated as the EE for Components 1 and 2. The Agreement

will clearly define the roles, responsibilities, and accountability arrangements of both parties, including specific deliverables, reporting and monitoring obligations, financial management provisions, and safeguards compliance requirements. The Subsidiary Agreement will serve as the legal instrument governing the transfer and use of GCF proceeds allocated to Armhydromet. It will specify the disbursement schedule, documentation required to support fund requests, and procedures for financial reporting and audit. The Agreement will also stipulate adherence to applicable national laws and regulations of the Republic of Armenia, as well as to the GCF policies and standards relating to procurement, environmental and social safeguards, gender, and anti-corruption.

In its capacity as an EE for Components 1 and 2, Armhydromet will engage qualified service providers and experts through nationally regulated procurement procedures consistent with the Law on Procurement of the Republic of Armenia and the project's Procurement Plan, and hiring procedures in line with national legislation. Resulting service provision contracts or agreements will cover specialized technical support areas, including quality-management systems, institutional capacity development, and design of resilience-financing instruments, etc.

- In its capacity as Executing Entity for Component 3, the EPIU will engage qualified service providers and experts through nationally regulated procurement procedures consistent with the Law on Procurement of the Republic of Armenia and the project's Procurement Plan, and hiring procedures in line with national legislation. Resulting service provision contracts or agreements will cover specialized technical support areas, including quality-management systems, institutional capacity development, and design of resilience-financing instruments, etc.
- Each Executing Entity (Armhydromet for Components 1–2 and EPIU for Component 3) will independently procure and contract specialized technical service providers required for the implementation of its assigned activities, in line with national procurement regulations and the approved Procurement Plan.

All agreements will adhere to GCF procurement policies, EPIU's fiduciary standards, and relevant Armenian national regulations.

Governance Structure

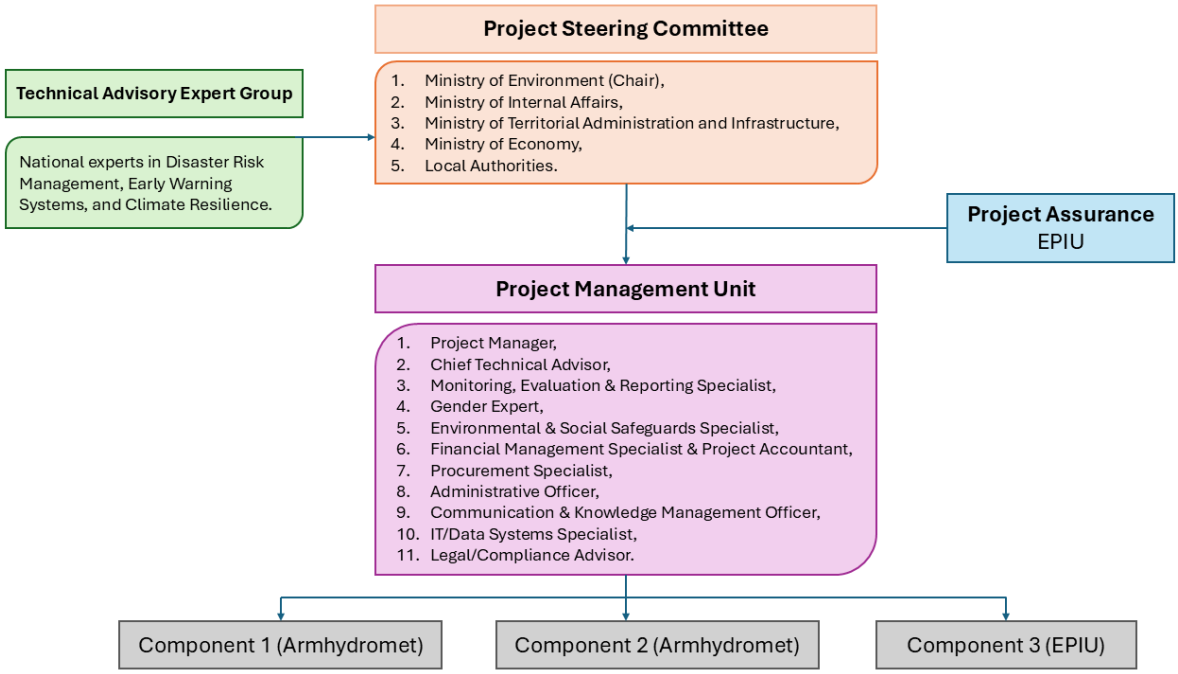
A **Project Steering Committee** (PSC) will be established to provide strategic oversight, ensure coordination between relevant ministries and stakeholders, and guide high-level decision-making. The PSC will be chaired by a senior representative from the Ministry of Environment and include representatives from:

- Ministry of Internal Affairs (oversight on disaster risk management and early warning systems)
- Ministry of Territorial Administration and Infrastructure
- Ministry of Economy
- Representatives of targeted regional and local authorities
- Civil society and private sector representatives as appropriate.

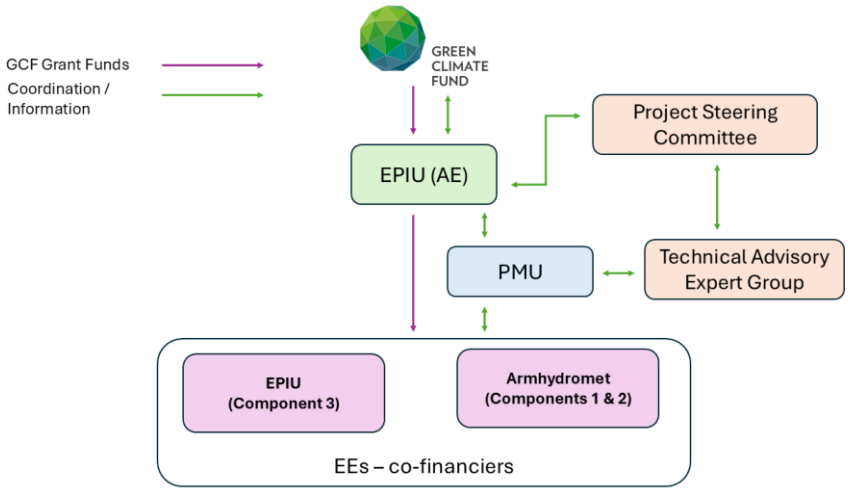
The PSC will meet at least twice per year to review project performance, approve annual workplans, and resolve major implementation issues.

A **Project Management Unit** (PMU) will be established within EPIU to oversee day-to-day project management, monitoring and evaluation, procurement, financial management, reporting, and coordination with the EEs. Details regarding PMU composition can be found in the Annex 2 Feasibility Study, Section 6.2

Implementation arrangements and flow of funds



Implementation arrangements



Flow of funds

C. FINANCING INFORMATION

C.1. Total financing

(a) Requested GCF funding (i + ii + iii + iv + v + vi)	Total Amount: 9.49	Currency: million USD ($)

GCF Financial Instrument		Amount	Currency	Tenor & grace	Pricing
(i)	Senior loans	Enter amount	Options	Enter years	Enter %
(ii)	Subordinated loans	Enter amount	Options	Enter years	Enter %
(iii)	Equity	Enter amount	Options		Enter % equity return
(iv)	Guarantees	Enter amount	Options	Enter years	
(v)	Reimbursable grants	Enter amount	Options		
(vi)	Grants	9.49	million USD ($)		
(b) Co-financing information		**Total amount**		**Currency**	
		0.5		million USD ($)	

Name of institution	Financial instrument	Amount	Currency	Tenor & Grace	Pricing	Seniority
Armhydromet EPIU	In kind	0.4 0.1	million USD ($)	Enter years Enter years	Enter %	Options

(c) Total investment (c) = (a)+(b)	**Amount**	**Currency**
	9.99	million USD ($)
(d) Co-financing ratio (d) = (b)/(a)	0.05	
(e) Other financing arrangements for the project/programme (max ½ page)	N/A	

C.2. Financing by component

Component and its beneficiaries[38]	Indicative cost (USD)	GCF financing		Co-financing		
		Amount (USD)	Financial Instrument	Amount (USD)	Financial Instrument	Name of Institutions
Component 1: Climate Information Services Delivery	5,754,800	5,686,000	Grants	68,800	In-kind	Armhydromet
Component 2: Impact-based MHEWS and Early Action	2,429,160	2,256,160	Grants	173,000	In-kind	Armhydromet
Component 3: Improving CIEWS for Investment and Financial Decision	1,566,040	1,495,840	Grants	70,200	In-kind	EPIU
MEL & Project Management	258,990	70,990	Grants	188,000	In-kind	Armhydromet EPIU

[38] Details regarding the beneficiaries can be found in Annex 2 Feasibility Study, Section 5.8.2.

Indicative total cost (USD)	**9,999,990**	**9,499,990**	**500,000**

C.3 Capacity Building and Technology development/transfer

The project places significant emphasis on the synergistic relationship between capacity building and technology development/transfer to strengthen Armenia's climate information and early warning systems (CIEWS) across the entire value chain. These two elements are designed to advance in parallel and reinforce each other, ensuring that technological upgrades are matched with the human and institutional capacities required for their sustainable and effective operation.

Capacity Building:

Capacity building activities will focus on enhancing the technical, operational, and institutional capacities of key national and regional stakeholders to ensure full absorption and long-term sustainability of new technologies introduced under the project. These activities will include training Armhydromet personnel in modern forecasting techniques, hazard modelling, calibration and maintenance of new equipment, and quality management systems aligned with WMO. Dedicated modules will also cover impact-based forecasting, climate risk analysis, and use of digital data systems, ensuring that the upgraded infrastructure directly translates into improved service delivery.

In addition, capacity building will extend to local authorities, emergency response agencies, and community-based organizations to strengthen their ability to interpret, disseminate, and act upon early warnings. The approach prioritizes inclusivity, gender responsiveness, and accessibility by ensuring that information is communicated in formats understandable to women, youth, and persons with disabilities. Partnerships with universities and training institutes will help institutionalize new knowledge and integrate project-developed curricula into academic and professional development programs, thereby sustaining expertise beyond the project term.

Technology Development and Transfer:

Technology development and transfer activities will target the modernization of Armenia's hydro-meteorological monitoring and forecasting infrastructure, ensuring the introduction of modern tools that are fully supported by trained national specialists. This will include upgrading and expanding meteorological and hydrological observation stations, installing automatic weather stations, enhancing data storage, processing, and hazard modelling systems. The project will also integrate high-resolution NWP and hydrological models into operational forecasting, supported by the capacity building measures described above to ensure that national specialists can effectively operate, calibrate, and interpret outputs from these systems.

This close coupling of technology and capacity ensures that Armenia will not only acquire state-of-the-art systems but also possess the skills, procedures, and institutional arrangements necessary for their effective and independent operation. The technological modernization will thus be accompanied by training, mentorship, and knowledge transfer, ensuring a sustainable shift toward a nationally owned, service-oriented early warning system capable of providing timely, accurate, and actionable information to end-users.

Requested GCF Funding Allocation:

- **Capacity Building Activities:** Approximately **USD 1,989,011**
  - Derived from: Output 1.2 (Integrated data, modelling, and NWP systems operational for short-range and impact-based forecasting), Output 1.3 (Quality management and operational procedures institutionalized in Armhydromet for WMO-certified climate services), Output 1.4 (NFCS operationalized and embedded in policy and sectoral planning), and Output 2.2 (Preparedness and response capabilities of national and local authorities strengthened for coordinated early action).
- **Technology Development and Transfer:** Approximately **USD 6,218,630**
  - Derived from: Output 1.1 (Modernized observation infrastructure generating higher-quality real-time hydrometeorological data) and Output 2.1 (Inclusive, multi-channel early warning dissemination system operational and accessible to diverse users).

These allocations reflect the project's integrated approach, where capacity building and technology transfer are not stand-alone components but mutually reinforcing pillars essential for achieving the project's objective of operationalizing a robust, people-centered MHEWS. This integration ensures long-term sustainability, national ownership, and enhanced climate resilience across Armenia.

C.3.1 Does GCF funding finance Capacity building activities?	Amount: 1,989,011 USD
C.3.2. Does GCF funding finance Technology development/transfer?	Amount: 6,218,630 USD

C.4. Justification for GCF funding request (max. 500 words)

27. Armenia is increasingly vulnerable to climate-induced hazards such as hailstorms, floods, droughts, and landslides, with rural and mountainous communities most at risk. Addressing these escalating impacts requires urgent investment in modern climate information and early warning systems. While the Government of Armenia (GoA) has prioritised EWS and disaster risk reduction, upgrading outdated infrastructure, forecasting systems, and data architecture demands financial resources far beyond available public budgets. Climate information services function as public goods with no viable revenue model, resulting in limited private-sector engagement and making concessional climate finance essential to avoid increasing sovereign debt for adaptation.

28. GCF support is critical to complement, rather than replace, domestic efforts under the GoA's Medium-Term Expenditure Programme (2026–2028), which plans to finance two radars. These allocations demonstrate strong country ownership but are insufficient to deliver a nationwide, integrated multi-hazard early warning system. The proposed project addresses these remaining gaps by upgrading meteorological and hydrological networks, deploying modern numerical weather prediction models, strengthening communication and dissemination systems, and improving community preparedness – components not covered through existing national financing.

29. Given the public-good nature of these investments, grant financing is required to ensure equitable access to climate risk information for Armenia's 2.9 million people, particularly vulnerable rural populations. Armhydromet's annual budget of USD 3.2 million of which over 90% is allocated to staff and taxes leaves negligible resources for system upgrades or maintenance, and no significant modernisation has occurred for more than 30 years. External grant support is therefore indispensable for Armenia to achieve system-wide technical upgrades and institutional strengthening aligned with global standards such as the WMO Early Warnings for All initiative.

30. GCF financing will close critical technical and financing gaps, strengthen national forecasting autonomy, and prevent additional sovereign borrowing. By modernising observational networks, hazard modelling, emergency communication systems, and community-based preparedness, the project will directly benefit 1.07 million people and in total the entire population, enabling Armenia's shift from reactive disaster response to proactive, anticipatory climate risk management – an outcome only achievable with GCF's catalytic support.

C.5. Exit strategy (max. 300 words)

31. The project establishes the technical, institutional, and human-capacity foundations required for Armenia to sustain modern climate information and impact-based early warning services beyond the project's duration. Armhydromet will be equipped with upgraded infrastructure, modelling systems, and trained personnel, enabling continued operation and maintenance of nationwide forecasting and climate-service functions as part of its core, budget-financed mandate. These capacities will be institutionalized through integration into the National Framework for Climate Services (NFCS) and relevant civil protection and disaster risk-reduction policies.

32. The project is fully aligned with the Government of Armenia's medium-term plans for establishing a national early warning system, including investments foreseen in the Medium-Term Expenditure Programme (2026–2028) (MTEP). The project serves as a catalytic first phase of Armenia's national multi-hazard early warning system, enabling immediate operational delivery while nationally financed investments are sequenced in parallel. The GCF-financed radar complements two government-financed radars, contributing to full coverage and supporting a unified national observation network. While the project will demonstrate community-level communication and preparedness solutions, the nationwide rollout of advanced warning technologies will be undertaken through future government and partner-supported initiatives. Besides, Operation and maintenance (O&M) of all systems established under the project will be fully covered through Armhydromet's national budget, with O&M costs embedded in the MTEP, ensuring long-term sustainability beyond the GCF project period.

33. Sustainability is further strengthened by the introduction of Armenia's emerging climate-risk financing and public-private collaboration frameworks under Component 3. The project will pilot foundational mechanisms, such as anticipatory-action triggers, early-action protocols, and a weather-index insurance model, that lay the groundwork for future scale-up using national and private resources. Knowledge products and operational guidance will ensure institutional continuity.

34. Continued participation in regional and global platforms, including WMO regional centres, REAP, and the Anticipation Hub, will support ongoing learning and technical cooperation. Standardized operational manuals, digital repositories, and strengthened monitoring and evaluation practices will maintain institutional memory and inform future investments. Together, these measures ensure long-term sustainability and position Armenia to further expand and finance its early warning systems beyond the project term. Further expanded elaboration on the project's exit strategy is presented in Annex 2, Section 7.2.

C.6. Financial management/procurement (max. 300 words)

35. The EPIU, as the AE, will manage all financial aspects of the project in line with its fiduciary standards accredited by the GCF. EPIU applies International Public Sector Accounting Standards (IPSAS) for financial reporting and ensures that all project expenditures are properly documented, tracked, and reported.

36. GCF grant funds will be disbursed to EPIU based on a disbursement schedule tied to the achievement of project milestones and submission of financial and progress reports. EPIU will, in turn, transfer funds to Executing Entities (Armhydromet and EPIU itself as EE) through subsidiary agreements, ensuring clear contractual obligations for fund use, procurement compliance, and financial reporting.

37. Procurement under the project will follow EPIU's accredited procurement procedures, which align with national public procurement laws and GCF procurement guidelines. Procurement activities, including the selection of contractors and suppliers, will be detailed in the Project Procurement Plan (Annex 8) and will prioritize transparency, value for money, and competition.

38. Periodic financial reviews and expenditure reports will be conducted on a quarterly basis, with consolidated financial reports submitted to the GCF annually. An external audit of project financial statements will be commissioned annually by an independent accredited auditor, in accordance with GCF audit requirements. The audits will assess fund utilization, procurement compliance, internal controls, and compliance with project covenants.

39. This robust financial management and procurement framework will ensure that funds are used exclusively for intended purposes, strengthen accountability, and guarantee that fiduciary obligations under GCF accreditation are met at all times.

D. EXPECTED PERFORMANCE AGAINST INVESTMENT CRITERIA

D.1. Impact potential (max. 300 words)

40. The project directly contributes to the GCF's strategic objectives by strengthening Armenia's ability to anticipate, prepare for, and respond to climate-induced hazards. It aligns with GCF Core Indicators related to resilience of vulnerable communities and institutions (CI1, CI2), strengthened regulatory and institutional frameworks (CI5), deployment of innovative climate technologies (CI6), and improved generation and use of climate information (CI8). By modernizing Armenia's observation, modelling, and early-warning systems, the project will enhance national capacity to produce reliable climate information and deliver timely, impact-based warnings across sectors. The project is strongly aligned with GCF USP-2 priorities, contributing to T2 by strengthening EPIU's institutional capacity as a Direct Access Entity, to T3 by expanding nationwide Early Warning Systems in line with EW4All, and to T6 through targeted investments in climate-resilient monitoring and forecasting infrastructure.[39]

41. Through upgraded forecasting systems, integrated hazard modelling, and multi-channel dissemination aligned with national emergency coordination processes, the project will substantially reduce human and economic losses from floods, droughts, hailstorms, and other climate hazards. Strengthened climate-services capacity within

[39] https://www.greenclimate.fund/sites/default/files/document/strategic-plan-gcf-2024-2027.pdf

Armhydromet and emergency management authorities will improve forecasting autonomy, operational readiness, and coordination across national and local institutions.

42. The project further enables Armenia to transition from reactive disaster response to risk-informed, anticipatory climate adaptation. Component 3 introduces foundational mechanisms for forecast-based action and climate-risk financing, including trigger methodologies, early-action protocols, and a pilot insurance model, creating enabling conditions for future public–private participation and long-term sustainability of climate-risk management services.

43. Across climate-sensitive sectors, the project will support more informed agricultural planning, water-resource management, resilient infrastructure design, and public-health preparedness. National institutions will benefit from modernized systems, expanded technical competencies, and operational procedures that improve the timeliness, accuracy, and accessibility of climate information.

44. Collectively, these interventions establish a coherent adaptation pathway in Armenia: improved hazard detection and modelling → localized, actionable forecasts → accessible and inclusive early warnings → early protective actions → reduced exposure and vulnerability. This value-chain approach strengthens Armenia's national resilience architecture and contributes directly to GCF's core result areas on resilience of vulnerable people and communities. Further detailed elaboration on the project's impact potential is presented in Annex 2, Section 7.3.

D.2. Paradigm shift potential (max. 300 words)

45. The project will catalyze a systemic shift in Armenia's climate-risk management – from reactive disaster response to anticipatory, impact-based early warning and adaptation planning. By combining institutional reforms, technological modernization, and inclusive capacity building, climate information and risk analysis will be embedded in routine decisions at national and community levels.

46. Knowledge generation and learning: The project places a strong emphasis on practical knowledge products and continuous learning, particularly under Output 2. By integrating local knowledge with modern scientific climate insights, the project empowers vulnerable users to make informed adaptation decisions and respond more effectively to climate-related hazards. Lessons learned will be captured through the NFCS platform, institutionalized in SOPs and training, and made accessible for replication nationwide.

47. Institutional transformation: The project supports the enhancement of Armenia's NFCS through a comprehensive gap and needs assessment that captures user perspectives, including stakeholder interviews. This will inform an NFCS Concept and Action Plan endorsed by decision-makers, providing a unified policy and coordination framework for multi-hazard climate services and early warning. Mainstreaming disaster and climate change considerations into a national framework highlights a shift toward resilience-focused policy and practice.

48. Technology & innovation driving systemic change: Investments in radar/upper-air systems, AWS networks, data platforms, and NWP/hydrological models will move Armenia from fragmented observations to integrated, impact-based forecasting. Standardized data flows, post-processing and visualization, and O&M procedures will institutionalize service quality. Together, these advances enable Armenia's transition from reactive to anticipatory and increasingly autonomous EWS operations, reducing reliance on external data sources and securing long-term sovereignty over climate information.

49. Potential for scaling, replication, and enabling private participation: The project's demonstration measures, particularly the weather-index insurance pilot and cell-broadcast early-warning dissemination system, will provide scalable models for national application. Lessons, institutional frameworks, and operational protocols developed through these pilots will guide future replication and investment through the NFCS. The project will therefore serve as a proof-of-concept platform for integrating risk-financing and communication innovations into Armenia's wider MHEWS architecture. As the project will improve both the technological and institutional capacities of Armhydromet, this will enable Armhydromet to better serve Central Asia by enhancing information delivery, facilitating knowledge transfer, and sharing observed data. Private-sector engagement will focus on creating enabling conditions (frameworks, pilot demonstrations, and partnership models) rather than direct investment during the project term, positioning Armenia to attract future public and partner financing for large-scale rollout of climate-risk insurance and advanced communication systems.

50. Regional coordination and cross-learning: The project will engage with ongoing GCF EWS initiatives in the South Caucasus (e.g., FP068 in Georgia; SAP046 in Azerbaijan) to share methods, promote interoperable data practices,

and exchange lessons on impact-based forecasting and communication, amplifying the paradigm-shift potential across countries facing similar hazards.

D.3. Sustainable development (max. 300 words)

51. The proposed project's alignment with the SDGs, the Paris Agreement, and the Sendai Framework will contribute to Armenia's progress towards disaster risk reduction, climate change adaptation, health improvement, and sustainable economic development. The project has multiple co-benefits, including, inter-alia, improved water resource management, reduced land degradation, strengthened community preparedness, which can be combined into the clusters presented below:

Economic co-benefits

52. The project will generate significant economic gains by reducing the financial burden of climate-induced disasters on households, farmers, and public infrastructure. A World Bank disaster risk finance assessment estimates that, excluding major earthquakes, Armenia has experienced around US$76.5 million per year in average damage and losses from floods, droughts and other weather-related events over 1994–2013[40] with complementary analyses indicating that roughly 90% of recorded disaster losses are linked to severe weather events and hydrometeorological hazards.[41] Sector-specific studies suggest that hail alone causes about US$30–40 million in agricultural losses annually, while drought impacts are on the order of US$6 million per year.[42] Drawing on global evidence that effective early warning systems can reduce asset losses from storms and floods by around 20–30%, the project's improvements in forecasting accuracy, lead times and warning dissemination could plausibly reduce Armenia's weather-related disaster losses by approximately US$15–20 million per year, with a substantial share of avoided damages occurring in the agriculture sector.[43] Based on these documented baselines and the expected uptake of tailored warnings and anticipatory measures, early warnings under this project are projected to avoid on the order of US$7–10 million per year in crop and livestock losses in high-risk marzes, while also lowering public expenditure on emergency response and reconstruction of roads, bridges, energy and irrigation infrastructure.[44] In parallel, the introduction of climate-risk insurance and anticipatory financing mechanisms under Component 3 is designed to extend financial protection to tens of thousands of climate-exposed households and enterprises, as detailed in the project's Feasibility Study.[45]

Social co-benefits

53. Strengthened early warning systems will directly enhance public health, community safety, and social well-being. Global evidence shows that effective early warning systems can reduce disaster-related mortality by up to 60%,[46] and reduce injuries and psychosocial impacts by 20–30% by enabling timely evacuation, preparation, and protective action.[47] In Armenia, the introduction of impact-based, multi-channel warnings is expected to substantially improve the reach and inclusiveness of alerts across the population, including approximately 300,000 people identified as particularly vulnerable due to age, disability, rural isolation, or socio-economic factors.[48] Inclusive communication formats (combining audio alerts, simplified text, and color-safe visual cues) will improve accessibility in line with established international good practice for people with functional limitations.[49] The system will also enhance safety in essential social institutions, with schools and health facilities benefiting from more reliable hazard advisories and preparedness information, consistent with documented global evidence that education and health systems show significant reductions in disruption and risk exposure under robust EWS arrangements.[50] Social resilience is further strengthened through improved household preparedness, reduced anxiety and stress during emergency periods,

[40] World Bank & GFDRR, *Disaster Risk Finance Country Note: Armenia* (2018).
[41] UNDP / GFDRR news article *"Armenia takes important steps toward a disaster resilient future"* (2018)
[42] World Bank, *Modernizing Weather, Climate and Hydrological Services in Armenia* (2018); Manucharyan M. (2025), "Climate change impacts on sustainable agriculture"
[43] UNDRR/PreventionWeb / "Business case for DRR: Why investing in DRR makes sense"; WMO article *"The Triple Dividends of Early Warning Systems and Climate Services"* (2024)
[44] Project economic estimate derived by applying a 20–25% loss-reduction factor from global EWS studies to documented baseline agricultural and infrastructure losses (see Annex 2, Feasibility Study, economic analysis section).
[45] See Annex 2 (Feasibility Study), Component 3 design and insurance uptake assumptions.
[46] UNDRR & WMO (2023). *Global Status of Multi-Hazard Early Warning Systems*.
[47] WMO (2024). *Triple Dividend of Early Warning Systems and Climate Services*.
[48] ArmStat (2023). *Social Snapshot and Poverty in Armenia*.
[49] UNDRR (2023). *Guidance on People-Centred Early Warning Systems*.
[50] UNESCO (2022). *Comprehensive School Safety Framework*; WHO (2021). *Health Emergency and Disaster Risk Management Framework*.

and reduced time spent (especially by women and caregivers) on post-disaster coping tasks, reflecting global findings that EWS and anticipatory action reduce household recovery burdens by 20–30%.[51]

Environmental co-benefits

54. Enhanced hydrological and meteorological forecasting will help protect environmental assets, reduce land degradation, and promote ecosystem resilience. Under the with-project scenario, earlier detection of heavy rainfall, flash floods, and hailstorms will enable preventive measures that limit soil erosion, reduce sediment transport and protext vulnerable riverbanks and agricultural landscapes in basins such as Debed, Aghstev, Arpa, and Vorotan. Improved hydrological modelling and seasonal outlooks will strengthen water resource management by supporting more efficient irrigation planning, reservoir operation, and hydro-ecological management. By reducing damage to forests, riparian zones, farmland, and soils during severe weather, the project will contribute to long-term ecosystem stability and decrease land-use pressures resulting from repeated climate shocks. These environmental benefits also reinforce Armenia's commitments to sustainable land management and climate resilience under the NAP and National Climate Services Framework.

Gender-sensitive development impact

55. The project will apply gender-responsive approaches across all components, ensuring that women, youth, and persons with disabilities are meaningfully involved in climate information use and decision-making. Gender-responsive communication protocols will be integrated into early warning dissemination to ensure information accessibility, comprehension, and trust. At least 50% of trained community focal points will be women, enhancing their leadership in disaster preparedness and resilience planning.

Private sector and innovation co-benefits:

56. The project will create enabling conditions for future private sector participation in climate information and resilience infrastructure through the piloting of weather-index insurance and frameworks for public–private partnerships (PPPs) under Component 3. While direct private investment is not anticipated during implementation, these mechanisms will establish the business and institutional foundations needed for sustained private engagement in climate-risk financing and innovation.

57. Through these combined impacts, the project will contribute directly to Armenia's Sustainable Development Goals (SDGs), notably SDG 1 (No Poverty), SDG 5 (Gender Equality), SDG 9 (Industry, Innovation and Infrastructure), SDG 11 (Sustainable Cities and Communities), and SDG 13 (Climate Action), strengthening the social, economic, and environmental foundations for climate-resilient development.

D.4. Needs of recipient (max. 300 words)

58. Armenia's geography and socio-economic profile make it highly vulnerable to climate-related hazards.[52] The country's predominantly mountainous terrain, steep river valleys, and semi-arid plains heighten exposure to floods, flash floods, droughts, hailstorms, and landslides.[53] More than one-third of the population lives in areas at recurrent risk of extreme weather[54], while agriculture, employing over 30 percent of the rural workforce, remains acutely climate-sensitive and highly dependent on rainfall and seasonal snowmelt.[55] Recurrent droughts and floods have accelerated to soil degradation, reduced crop yields, and intensified water scarcity in arid and highland regions, threatening food security and livelihoods.[56]

59. The country's institutional and financial limitations further compound these vulnerabilities. Armenia's national hydrometeorological service (Armhydromet) operates with limited fiscal resources, heavily reliant on the state budget and periodic donor support. Large parts of the observation and forecasting infrastructure, including radars, meteorological statons, and hydrological gauges, are outdated or non-functional, resulting in data gaps, delayed forecasts, data import, and fragmented information flows. The lack of sustainable financing and integrated data systems constrains the country's ability to deliver timely, reliable, impact-based early warnings and climate services

[51] Global Commission on Adaptation (2019). *Adapt Now: A Global Call for Leadership on Climate Resilience.*
[52] World Bank Group, Climate Risk Country Profile: Armenia, https://climateknowledgeportal.worldbank.org/country/armenia
[53] UNDRR Sendai Framework National Profile – Armenia, https://sendaimonitor.undrr.org/countries/armenia
[54] World Bank & Global Facility for Disaster Reduction and Recovery (GFDRR), Disaster Risk Profile and Risk Exposure Assessments for Armenia, https://www.gfdrr.org/en/armenia
[55] FAOSTAT Country Profile – Armenia, https://www.fao.org/faostat/en/#country/51; World Bank Group, World Development Indicators – Employment in Agriculture (Armenia), https://data.worldbank.org/indicator/SL.AGR.EMPL.ZS?locations=AM
[56] FAO, Drought, Land Degradation and Agricultural Impacts in Armenia, https://www.fao.org/countryprofiles/index/en/?iso3=ARM; Armenia Country Profile and National Reporting under the UNCCD, https://www.unccd.int/countries/armenia

at national and local levels. In parallel,coordination among key institutions (Armhydromet, the Ministry of Environment, and the Ministry of Internal Affairs) remains constrained by overlapping mandates and underdeveloped operational and communication protocols, limiting the effectiveness of end-to-end early warning delivery.

60. These nationally identified needs are alsocorroborated by global diagnostics, including the World Meteorological Organization's Early Warnings for All (EW4All) Dashboard for Armenia[57], which provides an assessment of gaps across the early warning value chain. It highlights remaining deficiencies in observation density, forecasting resolution, impact-based warning coverage, and last-mile dissemination, particularly for floods, heatwaves, and droughts affecting mountainous and rural areas. The Dashboard further underscores that while Armenia demonstrates emerging institutional readiness and strong political commitment, the scale of investment required to meet EW4All benchmarks exceeds available public financing, reinforcing the need for concessional climate finance to close these gaps. Further elaboration on the assessment of country's needs based on EW4ALL Dashboard is provided in Annex 2 Section 5.3.

61. The primary beneficiaries of the proposed project are rural farming households, women, and communities residing in hazard-prone marzes - particularly those exposed to recurrent climate hazards in Armavir, Shirak, Kotayk, Aragatsotn, as well as residents of Yerevan who face urban flood and heat-stress risks.[58] These groups will benefit from the strengthened abilities of national and local agencies to generate more accurate forecasts, disseminate timely warnings, and support effective early action. Institutions such as local authorities, emergency responders, hydropower and irrigation operators, and private insurers will benefit in their operational roles from improved climate information services, enabling them to better protect lives, infrastructure, and livelihoods. Ultimately, the enhanced capacity of national systems to produce and use high-quality climate information will contribute to increased safety and resilience for the population as a whole.

62. GCF funding is essential to overcome systemic barriers that currently prevent Armenia from building a fully functional, integrated MHEWS. It will:
    - Bridge critical data and infrastructure gaps by upgrading observation networks and forecasting models;
    - Strengthen institutional coordination through the establishment of the National Framework for Climate Services;
    - Develop sustainable financing mechanisms and public-private partnership models for climate services; and
    - Enhance capacity and inclusiveness across all levels of governance and society to ensure early-warning information is timely, accessible, and actionable.

63. By addressing these foundational challenges identified through both national assessments and the EW4ALL Dashboard, the project will enable Armenia to transition from a fragmented, donor-dependent system toward a self-sustaining, nationally owned climate-information and early-warning architecture, safeguarding vulnerable communities and supporting climate-resilient development, thus contributing to the global objective of universal access to life-saving early warnings.

D.5. Country ownership (max. 500 words)

64. The project is fully embedded in Armenia's national climate and disaster risk management priorities under the leadership of the Ministry of Environment, acting as the National Designated Authority (NDA) to the Green Climate Fund. The EPIU, a specialized State Agency under the Ministry of Environment, serves as the country's Direct Access Entity (DAE), Accredited Entity (AE) of the project and Executing Entity (EE) for Component 3, while Armhydromet acts as the EE for Components 1 and 2. This arrangement strengthens national institutional ownership and builds long-term technical capacity within Armenia's public sector. By empowering Armhydromet to operate advanced forecasting systems and by reinforcing EPIU's role as a GCF-accredited entity, the project enhances Armenia's institutional readiness for future climate finance mobilization and program implementation.

65. The project was designed through an inclusive multi-stakeholder consultation process conducted at both the national and marz (regional) levels, as detailed in the Stakeholder Engagement Plan (SEP). The consultations included national workshops in Yerevan (March 2025) with line ministries, local authorities, civil society

[57] EW4All Dashboard for Armenia: https://earlywarningsforall.org/site/early-warnings-all/dashboards/early-warnings-all-dashboard

[58] Beneficiary targeting is informed by regional climate and hazard vulnerability analyses in Annex 2. Feasibility Study (Section 3 Climate Profile; Sections 3.3 and 3.5 High-impact events and vulnerability; and Section 5.9.2 Beneficiary selection methodology), identifying Armavir, Shirak, Kotayk, Aragatsotn, and Yerevan as priority areas due to recurrent exposure to floods, droughts, hailstorms, and heat stress, consistent with WB-GFDRR disaster risk assessments for Armenia and the WMO EW4All Dashboard.

organizations, and academia, followed by regional consultations in all five target marzes. In total, over 220 stakeholders participated, including representatives of women's groups, farmers, youth associations, and persons with disabilities. This process ensured that project activities respond to local realities and align with community-level resilience priorities identified through participatory risk assessments and stakeholder feedback sessions.

66. The project aligns with the country's national priorities and policy framework. Armenia has made important progress in strengthening climate governance and disaster risk management through key national frameworks, including the National Adaptation Plan (2021), the Fourth National Communication (2024), the Disaster Risk Management Strategy and Action Plan, the National Platform for DRR, the National Framework for Climate Services (2019), and sector-specific policies such as the Landslide Disaster Management Concept. These strategies collectively emphasize multi-hazard risk assessment, enhanced early warning capabilities, strengthened hydrometeorological services, and improved local-level preparedness - priorities that are directly addressed by the proposed project. Further details on Armenia's national policy context and full alignment analysis are provided in Section 7.1 of Annex 2 (Feasibility Study).

67. The project builds upon and strengthens inter-ministerial coordination among the Ministry of Environment, the Ministry of Internal Affairs (including the Rescue Service and Crisis Management National Center), and regional administrations. This coordination mechanism, formalized through the Project Steering Committee (PSC), will guide joint planning, data exchange, and response coordination for early warning and disaster risk management. The arrangement also supports mainstreaming of climate information into local development strategies and disaster preparedness plans, ensuring vertical integration between national and subnational levels.

68. Regionally, the project is designed to complement ongoing GCF-supported EWS projects in the South Caucasus, specifically FP068 (UNDP–Georgia) and SAP046 (UNEP–Azerbaijan). Through collaboration facilitated by the Regional Environmental Centre for the Caucasus (REC Caucasus) and the WMO's Early Warnings for All Initiative, Armenia's project will engage in cross-learning and data-sharing on climate modelling, impact-based forecasting, and community-based communication protocols. This cooperation will contribute to a more coherent and interoperable regional climate early-warning architecture.

69. The project's implementation and institutional frameworks are designed to ensure long-term national ownership and sustainability. Institutional responsibilities will be gradually integrated into the mandates and budget lines of the Ministry of Environment and Armhydromet, consistent with the Government's Medium-Term Expenditure Programme (2026–2028), which includes financing for nationwide EWS infrastructure. The strengthened NFCS, ongoing stakeholder engagement mechanisms, and institutionalized coordination across ministries and marz administrations will secure the project's continuity and embed its results within Armenia's evolving national Early Warning System initiative.

D.6. Efficiency and effectiveness

D.6.1. Estimated cost per t CO_2 eq, defined as total investment cost / expected lifetime emission reductions (Mitigation and Cross-cutting)	(a) Total project financing	US$_____
	(b) Requested GCF amount	US$_____
	(c) Expected lifetime emission reductions	_____ tCO_2eq
	(d) Estimated cost per tCO_2eq (d = a / c)	US$_____ / tCO_2eq
	(e) Estimated GCF cost per tCO_2eq removed (e = b / c)	US$_____ / tCO_2eq
D.6.2. Expected volume of finance to be leveraged by the proposed project/programme and as a result of the Fund's financing, disaggregated by public and private sources (Mitigation and Cross-cutting)	(f) Total finance leveraged	US$ 500,000
	(g) Public source finance leveraged	US$ 500,000
	(h) Private source finance leveraged	US$_____
	(i) Total Leverage ratio (i = f / b)	**0.05**
	(j) Public source leverage ratio (j = g / b)	_____
	(k) Private source leverage ratio (k = h / b)	_____

D.6.3. Describe how the financial structure is adequate and reasonable in order to achieve the proposal's objective(s), including addressing existing bottlenecks and/or barriers; providing the minimum concessionality; and without crowding out private and other public investment. (max. 500 words)

The financial structure of the proposed project is designed to be both efficient and effective, ensuring the achievement of its transformative objectives while applying the minimum level of concessionality required. The project requests a GCF grant of **USD 9.5 million**, complemented by **USD 500,000 in-kind co-financing** from the Government of Armenia through Armhydromet and EPIU. The grant modality is essential to overcome key systemic barriers and existing financial constraints in Armenia's climate information services sector.

Rationale for grant modality and minimum concessionality

The hydro-meteorological and early warning systems sector in Armenia faces significant market failures: the generation of climate information and early warnings is a public good with limited commercial returns. As such, private sector investment is virtually absent, and national budget allocations are insufficient to modernize and expand infrastructure to meet growing climate risks. No revenue generation is associated with core services such as flood warnings, hazard monitoring, and agricultural drought forecasts. Therefore, grant financing from the GCF is the appropriate instrument to enable these investments and strengthen national resilience.

The grant will benefit the Government of Armenia, regional and local authorities, and directly impacted vulnerable communities by strengthening institutional systems, improving public services, and reducing future losses and damages from climate-induced hazards. This design avoids crowding out potential private sector engagement in related areas (e.g., micro-insurance, private forecasting services) by focusing on public good infrastructure and foundational services.

Efficiency and effectiveness of the financial structure

The total financing of USD 10 million enables critical investments in modern technologies, capacity building, and operational systems across the entire climate information value chain. The project is expected to directly benefit approximately **1,074,100 people (36.18%** of Armenia's population) and indirectly reach an additional **1,895,000 people,** effectively covering the entire population of the country. This results in a cost per direct beneficiary of approximately **USD** 9, which compares favorably to international benchmarks for similar early warning systems projects funded by the GCF and other climate finance mechanisms.

Extensive global evidence shows that investments in early warning systems deliver very high economic returns by reducing loss of life, protecting livelihoods, and avoiding damages to infrastructure and productive sectors.[59] According to international studies referenced in the project design, effective early warning systems can yield cost-benefit ratios of between 4:1 and 10:1, depending on the hazard type and country context. Further evidence supporting the high cost-effectiveness of early warning investments is provided in the Feasibility Study (Annex 2, Section 5.6.6), which compiles global findings showing that each USD 1 invested in early warning systems can generate USD 9 or more in economic benefits, and that modest global investments in EWS can avert billions of dollars in annual climate-related losses. Given Armenia's high vulnerability to floods, droughts, hailstorms, and landslides, and the substantial economic losses currently experienced from such events, the project is expected to be highly cost-effective in strengthening national resilience and adaptive capacity.

Financial needs, gaps and constraints

The financial needs assessment confirms a large gap between the existing capacity of Armenia's early warning systems and the level required to effectively manage growing climate risks. Constraints include limited domestic financing for capital investments, weak technological capabilities, and insufficient human and institutional capacity to sustain services without international support. GCF financing thus addresses the critical upfront investment needs while also building the foundation for future sustainability.

[59] Hallegatte S. et al., A Cost Effective Solution to Reduce Disaster Losses in Developing Countries — Hydro-Meteorological Services, Early Warning, and Evacuation (World Bank, 2012); UNDRR & WMO, Global Status of Multi-Hazard Early Warning Systems 2024; UNDP, How climate information and early warning systems protect communities and economies (2025).

Application of best available technologies and practices
The project design is based on best international practices, including the adoption of high-resolution NWP models, int egration of impact-based forecasting, and development of WMO-compliant quality management systems. Innovations include regional knowledge sharing on resilience financing and the operationalization of Armenia's NFCS.

The financial structure is therefore fully justified, highly efficient, and fundamental to achieving the project's paradigm-shifting impact in strengthening Armenia's climate resilience.

E. ANNEXES

E.1. Mandatory annexes

☒	Annex 1	NDA No-objection Letter(s) (Template)
☒	Annex 2	Pre-feasibility (or feasibility) study (Guidance)
☒	Annex 2a	Logical Framework (Template)
☒	Annex 2b	Timetable (Template)
☒	Annex 3	Budget plan that provides breakdown by type of expense including AE fees (Template)
☒	Annex 4	Gender assessment and action plan (Template)
☒	Annex 5	Co-financing commitment letter if applicable (Template)
☒	Annex 6	Term sheet including a detailed disbursement schedule and, if applicable, repayment schedule
☒	Annex 7	Risk assessment and management (Template)
☒	Annex 8	Procurement plan model (Template)
☒	Annex 9a	Legal Due Diligence (regulation, taxation and insurance) (Template)
☒	Annex 9b	Legal Opinion/Certificate of Internal Approvals (Template)

E.2. Other annexes to be submitted when applicable/requested

☐	Annex 10	Economic and/or financial analysis (Guidance) (mandatory for private-sector proposals)
☐	Annex 11	Appraisal, due diligence or evaluation report for proposals based on up-scaling or replicating a pilot project
☒	Annex 12	Environmental and Social Action Plan (ESAP) (Template)
☐	Annex 13	Operations manual for EDA projects (guidance)
☐	Annex 14	Assessment of GHG emission reductions and their monitoring and reporting (for mitigation and cross cutting-projects)
☒	Annex 15	Monitoring and Evaluation Plan
☒	Annex 16	Stakeholder Engagement Plan
☒	Annex 17	Theory of Change

No-objection letter issued by the national designated authority(ies) or focal point(s)

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REPUBLIC OF ARMENIA
MINISTER OF ENVIRONMENT
РЕСПУБЛИКА АРМЕНИЯ
МИНИСТР ОКРУЖАЮЩЕЙ СРЕДЫ

№ 1/27.1/4376

«_05_» «_07_» 2025

To: The Green Climate Fund ("GCF")

Re: No-objection letter in respect of the funding proposal **titled "Scaling up national adaptive capacities for climate change-driven natural hazards through strengthening monitoring and early warning systems" submitted by Environmental Project Implementation Unit State Agency**

Dear Madam, Sir,

We refer to the **funding proposal** titled "*Scaling up national adaptive capacities for climate change-driven natural hazards through strengthening monitoring and early warning systems*" in the Republic of Armenia submitted by Environmental Project Implementation Unit State Agency to us on April 14, 2025 (the " Proposal").

The undersigned is the duly authorized representative of the Ministry of Environment, the **national designated authority** of the Republic of Armenia.

Pursuant to GCF Decisions B.08/10, B.37/22, and B.41/02, the content of which we acknowledge to have reviewed, in my capacity as **focal point**, we hereby communicate our no-objection to the Proposal.

By communicating our no-objection, it is implied that:

(a) The government of the Republic of Armenia has no-objection to the Proposal; and
(b) The Proposal is in conformity with the national priorities, strategies and plans of the Republic of Armenia.

We also confirm that our national process for ascertaining no-objection to the **Proposal** has been duly followed.

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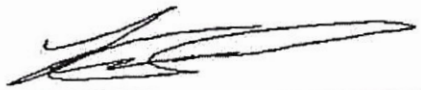
Notwithstanding the foregoing, we expect Environmental Project Implementation Unit State Agency to take the necessary measures to ensure that the **project** as described in the Proposal is implemented in a manner consistent with applicable national laws.

We acknowledge that this letter will be made publicly available on the GCF website.

Kind regards,

5/7/2025

X 

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Signed by: SIMIDYAN HAKOB 3004840588

Hakob Simidyan

Secretariat's assessment of SAP068

Proposal name:	Scaling up national adaptive capacities for climate change-driven natural hazards through strengthening monitoring and early warning systems
Accredited entity:	Environmental Project Implementation Unit State Agency of the Ministry of Environment of the Republic of Armenia (EPIU)
Country/(ies):	Armenia
Project/programme size:	Micro

1. The Secretariat has assessed this funding proposal against the GCF investment criteria and its consistency with the GCF safeguards and policies. This proposal is recommended to the Board for approval. The Board may wish to consider approving this funding proposal in accordance with the term sheet agreed between the Secretariat and the accredited entity (AE), and, if considered appropriate, subject to the conditions set out in annex II to document GCF/B.44/02.

I. Secretariat's assessment of the funding proposal against the investment criteria

Investment criteria	Does the proposal meet the requirements of the GCF investment criteria?	Strengths/main points of caution
Impact potential	Yes	The project delivers significant adaptation value by strengthening Armenia's ability to anticipate and respond to climate risks that increasingly threaten lives, livelihoods and critical infrastructure. The project will provide direct access to improved early warning and preparedness mechanisms to approximately 1.07 million people living in high-risk regions, while an additional 1.9 million people will indirectly benefit from strengthened

		national forecasting systems and enhanced climate services, extending improved early warning coverage to the entire population. The project strengthens Armenia's forecasting and early warning systems by modernizing observation and modelling capacities, improving high-resolution hazard forecasts and establishing inclusive impact-based warning dissemination mechanisms. It also introduces forecast-based early actions and initial climate-risk financing mechanisms to enable timely, anticipatory responses to climate hazards. These interventions will deliver impacts across climate-sensitive sectors by strengthening data-driven planning and risk management in agriculture, water resources, energy and infrastructure, and public health through improved modelling, ensuring accurate climate information and enhancing early warning systems. Collectively, these measures strengthen Armenia's ability to implement timely protective actions, reduce climate-related losses and deliver substantial, verifiable adaptation benefits that support long-term national resilience.
Paradigm shift potential	Yes	The project contributes to Armenia's long-term transition toward a people-centred, multi-hazard early warning system by addressing core structural gaps in climate observation, forecasting and service delivery. Modernization of the national observation network and modelling platforms, together with the introduction of numerical weather prediction and impact-based forecasting, will integrate currently fragmented systems into a coherent national architecture. Through the operationalization of the National Framework for Climate Services, supported by strengthened procedures, training and institutional coordination, the project establishes the enabling foundations for sustained system-wide improvement. A central element of this transition is strengthened forecasting autonomy. By reducing reliance on externally sourced data and enabling nationally generated, high-resolution

		climate information tailored to Armenia's terrain, the project establishes a nationally owned, self-sustaining early warning architecture embedded within public institutions. The project further supports a shift from reactive disaster response toward anticipatory, risk-informed planning by formalizing coordination across the Armenian Hydrometeorology and Monitoring Center (Armhydromet), the Ministry of Internal Affairs, regional administrations and local communities, and by introducing initial anticipatory action and climate-risk financing mechanisms. These measures create a credible platform for future scaling, including through the Medium-Term Expenditure Programme and regional knowledge exchange. While full transformation will require sustained financing, continued capacity development and long-term institutional commitment, the project provides a solid and realistic foundation for systemic change.
Sustainable development potential	Yes	The project is expected to generate strong social, environmental and economic co-benefits by reducing the impacts of climate-induced hazards on vulnerable communities, livelihoods and critical infrastructure. Improved climate information services and impact-based early warning systems will strengthen public safety, enhance agricultural and water resource management, and support more resilient urban and rural development. The project directly contributes to the Sustainable Development Goals (SDGs), including SDG 1 (no poverty), SDG 5 (gender equality), SDG 9 (industry, innovation and infrastructure), SDG 11 (sustainable cities and communities) and SDG 13 (climate action). The project further advances inclusive development by integrating gender-responsive approaches that expand the participation of women, youth and people with disabilities in preparedness and capacity-building. Environmental co-benefits include improved air quality monitoring, reduced land degradation risks and enhanced ecosystem protection through earlier and more effective climate responses. Economically, the project is expected to reduce asset losses and enhance productivity in climate-sensitive sectors,

		while also creating enabling conditions for future private sector engagement in climate risk financing and resilience infrastructure.
Needs of the recipient	Yes	Armenia's climate vulnerability and its financial, technical and structural constraints highlight the need for strengthened integrated early warning systems and international financing. Armenia faces severe climate vulnerability due to its mountainous terrain, climate-sensitive agriculture, and recurring floods, droughts and hails, with livelihoods and food security continuously threatened by land degradation, crop decline and water scarcity. At the same time, outdated and non-functional observation facilities, persistent data gaps, forecast delays and fragmented information systems prevent Armhydromet from providing accurate, impact-based climate services. Limited budgets and insufficient staff capacity further reduce service quality and hinder modernization. Insufficient inter-agency coordination and inadequate communication protocols also constrain efforts to develop an integrated early warning system. These systemic gaps leave vulnerable populations, including rural households, women, elderly people and people with disabilities, repeatedly exposed to climate-related hazards without timely warnings or adequate preparedness. Local governments, emergency response agencies and private sector actors likewise face challenges in operational planning owing to the absence of reliable and accessible climate information. Meeting these needs requires modernized observation and forecasting systems, strengthened institutional coordination through the National Framework for Climate Services and inclusive early warning dissemination across all regions. Armenia's fiscal constraints and limited technical capacity restrict its ability to undertake these foundational investments on its own, particularly as early warning systems are public goods that do not generate commercial returns. In this context, GCF plays a catalytic role by providing the concessional resources and technical support necessary to close structural gaps, unlock institutional capacity and enable the establishment of a fully

		integrated, multi-hazard early warning system that protects lives, livelihoods and sustainable development.
Country ownership	Yes	The project demonstrates a strong alignment with Armenia's national climate and development priorities. It directly supports the national adaptation plan, the Disaster Risk Management Strategy and Action Plan and the Government's commitments to strengthen climate information services, enhance disaster preparedness and modernize hydrometeorological infrastructure. The intervention is further anchored in the Government of Armenia's Medium Term Expenditure Programme, which allocates resources for early warning system development and establishes a clear pathway for long-term institutional integration. The project was led and co-developed by the Environmental Project Implementation Unit (EPIU) under the Ministry of Environment, in close coordination with Armhydromet and the Ministry of Internal Affairs, demonstrating strong government ownership and clear demand for both the design and use of upgraded climate services. Extensive national and regional consultations, including workshops across multiple provinces and targeted engagement with local authorities, civil society organizations, women's groups and technical agencies, demonstrate inclusive stakeholder participation in shaping project priorities. The executing entities have articulated clear mandates and responsibilities for system operation, data management and coordination, including through the establishment of the National Framework for Climate Services. The project also builds on lessons learned from previous national and partner-supported initiatives, ensuring coherence and avoiding duplication. Taken together, these elements indicate strong country ownership and a high likelihood of sustained government engagement in the expansion and long-term maintenance of early warning and climate information services.

Efficiency and effectiveness	Yes	The project requires grant financing from GCF owing to structural constraints that prevent climate information and early warning services from being financed through market-based mechanisms. These services are public goods that do not generate revenue. This limits private sector involvement and creates funding gaps that cannot be met through national budgets alone. The total project cost of approximately USD 10 million, including about USD 9.5 million from GCF and USD 0.5 million in in-kind co-financing, focuses on essential public infrastructure, institutional capacity and foundational systems. Given the micro-scale and capital-intensive nature of the intervention, allocations for project management and M&E are necessarily lean but remain fit for purpose and proportionate to the project's risk profile and oversight arrangements. With direct benefits for approximately 1.07 million people and total benefits extending to the entire national population of 2.97 million people, the intervention demonstrates strong value for money at an estimated cost of approximately USD 9 per direct beneficiary. The project's design is efficient and technically sound. It addresses critical gaps through targeted investments in observation systems, forecasting models and inclusive early warning dissemination, in line with international best practice and World Meteorological Organization standards. The implementation approach builds on established national structures and is supported by clear institutional roles, a detailed procurement plan and an operations and maintenance framework that strengthens delivery feasibility. By reinforcing the National Framework for Climate Services and introducing approaches that support future resilience financing, the project is expected to improve long-term operational efficiency and create enabling conditions for future public and private sector engagement. Overall, GCF would play a catalytic role in closing foundational system gaps and enabling a cost-effective pathway towards strengthened national climate resilience.

II. Secretariat's assessment of the funding proposal's consistency with GCF safeguards and policies

Consistency with GCF safeguards and policies	Secretariat's assessment of the proposal	Remarks (strengths/points of caution)
Environmental and social safeguards, including the Indigenous Peoples Policy	Consistent	The project is categorized as category C for environmental and social risks and impacts, in accordance with the GCF Revised Environmental and Social Policy, the AE accreditation level and the simplified approval process requirements. The key environmental and social risks and impacts identified are considered minimal and are related mostly to the installation of a radar and the modernization of existing upper-air and hydrological stations under component 1. Occupational health and safety risks, risks related to labour standards compliance and the generation of limited waste during the installation and operational phases are addressed in the environmental and social action plan (ESAP). All installations will be located on State-owned land, with no physical or economic displacement and outside of sensitive natural habitats and culturally significant areas. Components 2 and 3 are anticipated to have no adverse risks and impacts as component 2 does not include physical work and is entirely analytical and advisory in nature, while component 3 will only involve the provision of office equipment, computational tools and software procurement. The innovation laboratory under component 3 will be hosted within existing Government-owned premises designated by the Ministry of Environment. The ESAP, which was prepared by the AE, outlines, inter alia, the environmental and social risks and impacts, the corresponding mitigation measures and the procedures for continuous screening and monitoring during project implementation. The application of the exclusion list for screening during implementation will avoid activities that could potentially raise the environmental and social risk level beyond minimal. The ESAP will be jointly implemented and monitored by the AE and the executing entity safeguards focal

		points. Environmental and social safeguards training for those involved in ESAP implementation has been identified as a measure to strengthen safeguards capacity. In compliance with GCF requirements, grievance redress systems at the project and AE level and the GCF Independent Redress Mechanism will be made available for project stakeholders, including workers. The grievance redress mechanism (GRM) will be disseminated as part of activities under the stakeholder engagement plan prepared by the AE for the project. The stakeholder engagement plan includes information on the engagement process undertaken during the funding proposal's development stage and activities for continuous stakeholder engagement during implementation. National, regional and community-level consultations, including with representatives of the most vulnerable and marginalized, civil society organizations/non-governmental organizations and academia, have been undertaken and their views have been incorporated in the project's design. The overall implementation of the stakeholder engagement plan will be led by the communications officer within the project management unit. **GCF Indigenous Peoples Policy and environmental and social safeguards 7: Indigenous Peoples.** Following its due diligence, the AE confirmed that there are no Indigenous Peoples within the target areas and that no project activities will affect Indigenous Peoples. The AE has committed to ongoing screening during implementation, in line with the exclusion list, which prohibits the financing of activities that affect lands owned or claimed by Indigenous Peoples without their full documented consent. **Sexual exploitation, abuse and harassment (SEAH).** The GCF Revised Environmental and Social Policy adopted by decision B.BM-2021/18 requires safeguarding from SEAH in GCF-financed activities. The AE included SEAH safeguarding in its submission to the funding proposal. The project will include activities that engage community members, for example training and capacity-building, and the review and enhancement of physical infrastructure critical for emergency response, where contractors and project workers may interact with communities. SEAH risk factors include patriarchal social norms and

		inadequate survivor protection mechanisms, which also limit women's access to justice, as outlined in the gender assessment. The project will adopt a zero-tolerance approach to SEAH, which will be clearly communicated to all partners. Mitigation measures for SEAH risks are included in the ESAP, together with responsibilities, the schedule for implementation and the expected results. These include mandatory SEAH training for all project staff and contractors, a code of conduct and awareness-raising for beneficiary communities. A project-level GRM will be established to address complaints from stakeholders during implementation. Provisions for handling SEAH-related grievances within the GRM are outlined in the ESAP. These include confidential reporting channels and referring survivors to support services, such as medical and psychosocial care. In addition to the AE-level GRM established by EPIU, the project will operationalize a field-level GRM to address concerns raised by stakeholders at the community level, and the GCF Independent Redress Mechanism will be available to receive and respond to SEAH-related grievances. Information on the review and monitoring of SEAH prevention measures is included in the ESAP and the gender assessment, along with relevant indicators and the expected results from implementing the mitigation actions. The gender specialist will be responsible for monitoring SEAH, ensuring that identified issues are addressed through timely remedial actions and reporting.
Gender policy	Consistent	The AE provided a gender assessment and action plan with the funding proposal and therefore complies with the requirements of the GCF Gender Policy. Persistent gender inequalities and the disproportionate domestic and caregiving roles of women make them vulnerable to climate risks, particularly in rural and mountainous areas. Women face a disproportionate risk during hazardous events such as floods owing to mobility restrictions, care responsibilities and limited access to emergency communication tools. Their overrepresentation in subsistence farming and informal labour, along with limited access to water rights and irrigation infrastructure, increases their drought-related livelihood losses. Structural inequalities limit women's access to climate information and

		early warning systems. Contributing factors include rural and mountainous locations that have limited mobile telephone connectivity, men being the primary recipients of public information and women's exclusion from decision-making processes that enable proactive responses to warnings. When climate information is provided, it is often not tailored to the specific needs of women, and technical formats can particularly disadvantage people with limited education, making it difficult to make timely and informed decisions and take appropriate action. The gender assessment also addresses how gender intersects with factors such as age and disability. The gender action plan includes activities, baselines, performance indicators, timelines, responsibilities and cost estimate for implementation. It addresses issues raised in the gender assessment by ensuring women's representation in National Framework for Climate Services technical working groups and community feedback structures, enabling their participation and influence in decision-making. The project will develop gender-sensitive warning messages and pilot community-based dissemination systems prioritizing women, the elderly and disabled users to address access to climate information. The gender action plan also includes activities for simulation exercises for evacuating communities in a gender-sensitive manner. Furthermore, women will be trained in emergency preparedness as community leaders and first responders, empowering them with greater agency. In addition, anticipatory action protocols will prioritize actions that benefit women farmers, caregivers and vulnerable households to assist in meeting the different climate information needs of women and men. The AE is advised to include targets for vulnerable groups, such as the elderly and people with disabilities, in the gender action plan. Additionally, the AE can incorporate in the gender action plan flexible training schedules and locations that take into consideration caregiving responsibilities and transport limitations.
Risks	Consistent	The funding proposal's implementation and impact are subject to several external and project-specific factors, including macroeconomic fluctuations that may affect procurement costs, operational and technical integration challenges related to hydrometeorological

		system upgrades, and inter-agency coordination requirements across implementing institutions. In addition, the sustainability of anticipatory action and climate-risk financing mechanisms will depend on continued institutional commitment and effective cross-sector collaboration. Mitigation measures have been integrated into the project design through close engagement between the AE and the Secretariat, including phased procurement planning, formal governance structures, capacity-building support, and the embedding of operations and maintenance arrangements within the national hydrometeorological budget framework. As a result, the overall residual risk profile of the project is assessed as low. The AE has assessed the residual risk of money laundering/terrorist financing (ML/TF) and other integrity risks as low based on its existing institutional controls that will be applied during project implementation. These include anti-money laundering/countering the financing of terrorism (AML/CFT) due diligence measures such as screening for beneficial ownership and politically exposed persons (PEPs), as well as regular audits to track fund flows. These measures will help mitigate the elevated inherent ML/TF risk the AE has identified in relation to private sector participation in public–private partnerships. The AE has determined that residual risk of other prohibited practices, such as corruption or bribery, is moderate based on mitigation measures such as transparent, competitive bidding and independent oversight mechanisms. In order to mitigate elevated risk associated with infrastructure works, the AE will implement enhanced fiduciary controls, such as comprehensive due diligence, including beneficial ownership checks, of all bidders, suppliers, and subcontractors. Moreover, the Project Management Unit (PMU) will include a dedicated compliance officer who will oversee day-to-day management of integrity risk.
Fiduciary	Consistent	EPIU will serve as the AE and will retain overall fiduciary oversight of the project in accordance with the accreditation master agreement and the funded activity agreement. As the AE, EPIU will be responsible for receiving GCF funds in a dedicated project account, managing disbursements to Armhydromet and to EPIU for component 3 activities and verifying expenditure reporting before releasing subsequent advances. EPIU will ensure

		compliance with GCF requirements for financial management, reporting, procurement, environmental and social safeguards, and auditing. It will provide consolidated financial and performance reporting, oversee project risk management, endorse procurement plans and ensure that all implementation partners follow approved fiduciary procedures. Annual external audits will be commissioned in line with GCF requirements, complemented by internal control mechanisms and periodic checks through national oversight bodies. EPIU will also serve as the executing entity for component 3, responsible for implementing activities related to resilience financing, anticipatory action, knowledge management, and monitoring and evaluation. For components 1 and 2, Armhydromet will act as the executing entity and will implement activities related to the observation network, meteorological and hydrological modelling, data system upgrades and early warning dissemination. Armhydromet will undertake procurement and financial management of its components in accordance with national procurement legislation and procedures endorsed by EPIU. Both entities will follow a tiered financial control system, with Armhydromet conducting first-level verification and EPIU providing second-level review and consolidation. These fiduciary arrangements will ensure clear accountability, transparent fund management and effective delivery of project activities throughout implementation.
Results monitoring and reporting	Consistent	The project presents a clear and coherent theory of change, with logical linkages between system-level investments in observation, forecasting and dissemination and improved preparedness and climate resilience outcomes. The logical framework is consistent with the Integrated Results Management Framework and includes relevant core, supplementary, enabling environment and project-specific indicators, including core indicator 2 on beneficiaries and supplementary indicator 2.4 on the population covered by improved early warning systems. The monitoring, evaluation and learning plan is aligned with the logical

		framework and clearly defines baselines, targets, means of verification and institutional responsibilities. The estimates of the number of beneficiaries are based on hazard exposure and early warning coverage analysis and are considered reasonable for the scope of the intervention. The plan to refine the beneficiary numbers during implementation through baseline studies and improved coverage modelling is appropriate given the nature of early warning systems. Gender-responsive monitoring is integrated through a sex and vulnerability disaggregation of relevant indicators. The inclusion of independent mid-term and final evaluations, together with annual learning reviews, is proportionate to the project's scale and is aligned with GCF evaluation policy requirements, providing confidence that results will be credibly tracked and used to support adaptive management.
Legal assessment	Not applicable	The legal arrangements for the project will be based on the accreditation master agreement between GCF and the Accredited Entity, which has been signed and is effective (the "**AMA**"). Consequently, they will consist of a project-specific funded activity agreement that incorporates the AMA. The Accredited Entity has provided a legal opinion/certificate confirming that it has obtained all internal approvals and it has the capacity and authority to implement the project. The proposed project will be implemented in the Republic of Armenia (the "**Host Country**"). The GCF has been granted privileges and immunities in the Host Country. GCF does not hold industrial property protection for its combined logo (sphere with the words "Green Climate Fund") in the Host Country. This means that, while industrial property protection is pending, (i) GCF's combined logo could be used by other entities or individuals (including those seeking to impersonate GCF) and (ii) there could be legal

		claims by entities or individuals asserting their protected trademark, opposing GCF using its combined logo in the country. In both cases, this may lead to reputational risk. To facilitate prompt implementation of the project, it is recommended that any approval by the Board be made subject to the following conditions: (a) Signature of the funded activity agreement in a form and substance satisfactory to the GCF Secretariat within 180 days from the date of Board approval; and (b) Completion of the legal due diligence to the satisfaction of the GCF Secretariat prior to the signature of the funded activity agreement.

Independent Technical Advisory Panel's assessment of SAP068

Proposal name:	Scaling up national adaptive capacities for climate change-driven natural hazards through strengthening monitoring and early warning systems
Accredited entity:	Environmental Project Implementation Unit State Agency of the Ministry of Environment of the Republic of Armenia (EPIU)
Country/(ies):	Armenia
Project/programme size:	Micro

I. Assessment of the independent Technical Advisory Panel

1. The funding proposal Scaling up national adaptive capacities for climate change-driven natural hazards through strengthening monitoring and early warning systems (EWS) in Armenia is for a micro-sized public sector adaptation project under environmental and social safeguards category C. The project was submitted under the simplified approval process by the Environmental Project Implementation Unit (EPIU) State agency as the accredited entity (AE).[1]

2. The project aims to enhance Armenia's resilience to climate change by providing more reliable weather, climate and hydrological information, to be delivered through three complementary components: (i) modernizing the observation infrastructure and network and strengthening the forecasting capabilities of the Hydrometeorology and Monitoring Center (Armhydromet) to deliver timely, localized and impact-based forecasts; (ii) strengthening the dissemination and communication of impact-based warnings for all at-risk populations; and (iii) strengthening measures for anticipatory action, including by introducing innovative financing mechanisms.

3. Armenia, a landlocked country in the Caucasus region, is increasingly exposed to climate-induced hazards, including droughts, floods, hailstorms, landslides and heatwaves, which affect communities, infrastructure and climate-sensitive sectors. The country's largely mountainous terrain and diverse topography, risks of seismic activity and landslides, limited forest cover and water stress further increase the country's vulnerability to climate-related hazards. Rural low-income communities, particularly those living in mountainous and arid regions, are vulnerable to climate change as they depend on agriculture and access to water resources for their livelihoods.

4. Armenia's existing national climate information and early warning system (CIEWS) provides basic monitoring functions for climatic hazards such as floods, droughts, landslides and hailstorms. However, the system is undermined by outdated technology, its forecasting capabilities are limited, its institutional coordination is fragmented, and early warnings often do not reach vulnerable communities in a timely manner.

5. The project will support Armenia to transition from its current hazard-based alert system to a fully operational impact-based multi-hazard early warning system (MHEWS). The approach is fully aligned with the four pillars of the United Nations Early Warnings for All

[1] This assessment is based on the full and final funding proposal package received by the iTAP on 19 December 2025.

(EW4ALL)[2] initiative, namely risk knowledge, monitoring and forecasting, warning dissemination, and preparedness and response. It is also structured around the five components of the Global Framework for Climate Services, an initiative established by the World Meteorological Organization (WMO) that provides an operational framework for delivering high-quality climate information to support decision-making across climate-sensitive sectors.[3]

6. The table below provides details of the project's components and their associated outputs.

Table: Project components and financing

Project components	GCF grant funds (USD)	Co-financing (USD)
Component 1. Climate information services delivery • Output 1.1. Modernized observation infrastructure generating higher-quality real-time hydrometeorological data • Output 1.2. Integrated data, modelling and numerical weather prediction systems operational for short-range and impact-based forecasting • Output 1.3. Quality management and operational procedures institutionalized in Armhydromet for WMO-certified climate services • Output 1.4. National Framework for Climate Services operationalized and embedded in policy and sectoral planning	5,686,000	68,800
Component 2. Impact-based multi-hazard early warning systems and early action • Output 2.1. Inclusive, multi-channel early warning dissemination system operational and accessible to diverse users • Output 2.2. Preparedness and response capabilities of national and local authorities strengthened for coordinated early action	2,256,160	173,000
Component 3. Improving climate information and early warning systems for investment and financial decision • Output 3.1. Anticipatory action foundations and public–private engagement frameworks established • Output 3.2. Monitoring, evaluation, accountability and learning systems operational to support adaptive management • Output 3.3. Innovation, research partnerships and regional knowledge exchange strengthened	1,495,840	70,200
Subtotal for outputs		
Monitoring and evaluation and project management	70,990	188,000
Totals by funding source (rounded)	**9 499,990**	**500,000**
Total project cost	**9,999,990**	

7. The project implementation period is five years, with an estimated lifespan of 15 years. EPIU will be the AE while also serving as the executing entity (EE) for component 3, while Armhydromet, serving as the other EE, will execute activities under components 1 and 2. The

[2] See https://wmo.int/activities/early-warnings-all/wmo-and-early-warnings-all-initiative.
[3] Global Framework for Climate Services (see https://wmo.int/activities/global-framework-climate-services-gfcs).

total cost is USD 9,999,990, which includes USD 9,499,990 as a GCF grant and an in-kind contribution of USD 500,000 from Armhydromet (USD 400,000) and EPIU (USD 100,000).

1.1 Impact potential *Scale: N/A*

8. **Climate change risk, exposure and vulnerability.** The funding proposal and its feasibility assessment (annex 2 to the funding proposal) provide a robust and evidence-based climate rationale for the project. Armenia is highly exposed to climate change risks and related hazards, such as droughts, floods, hailstorms, landslides and forest fires. The country's mountainous terrain and topography, diverse climatic zones, limited forest resources and water stress exacerbate these climate risks.

9. Armenia's climate exhibits variability across seasons and decades, and recent decades show pronounced warming, increased heat extremes, longer heatwaves and reduced cold extremes. The country has also experienced decreases in average rainfall, highly variable and uneven distribution of precipitation and an increased frequency of intense weather events. Since 1990, Armenia has recorded 25 major climate-related and natural disaster events resulting in severe human and economic consequences. The funding proposal highlights several such events, including a drought in 2000 that affected 297,000 people and resulted in an estimated USD 143 million in agricultural losses.

10. Future climate projections for Armenia under Representative Concentration Pathway (RCP) emission scenarios RCP 4.5 and RCP 8.5 indicate an increase in climate impacts, particularly as surface temperatures increase and rainfall patterns change (see tables 4 and 5 in the funding proposal). Warming is projected to be concentrated mainly during the summer months, bringing heightened risks of drought. While annex 2 to the funding proposal presents a comparative analysis of precipitation maps that indicate a potential decline in precipitation by the end of the century, it also acknowledges substantial uncertainties in estimates of precipitation changes.

11. Climate change is negatively impacting Armenia's economic growth, ecosystems and biodiversity, as well as the health and well-being of its population. Annex 2 to the funding proposal includes climate-related vulnerability assessments for the key sectors agriculture and livestock, water resources and ecosystems, health, and energy. For example, agricultural crop yields are highly sensitive to hail, frost, heatwaves and drought, and the emergence of new pests and diseases, which will affect the incomes of rural communities. In the health sector, climate change will worsen the burden of climate-sensitive diseases, and hazardous hydrometerological phenomena and worsening air quality are having serious negative consequences for the health of the population. In the water sector, projected changes in river flows due to climate change are expected to negatively impact river basin-level water balances, with knock-on consequences for key economic sectors. Climate change, and increasing temperatures, will also affect energy consumption trends. The poorer rural and agriculture-dependent communities, people with disabilities and internally displaced persons are expected to be the most affected, as these groups are especially vulnerable to water scarcity, increased health risks and declining agricultural yields. Women and girls will also be disproportionately affected owing to unequal access to productive assets, such as land and water, and to decision-making processes.

12. The growing frequency and severity of climate-related events requires dedicated monitoring, forecasting and warning capacities within the national MHEWS architecture to enhance emergency preparedness and response, ultimately reducing loss of life, livelihoods and infrastructure damage**.**

13. **Adaptation results areas (ARA).** The project will target three GCF results areas for adaptation by contributing to:

(a) Increased resilience of the most vulnerable people and communities (ARA 1) (40 per cent of GCF resources);

(b) Health and well-being, and food and water security (ARA 2) (30 per cent of GCF resources); and

(c) Infrastructure and built environment (ARA 3) (30 per cent of GCF resources).

14. **Beneficiaries.** The project will benefit an estimated 2,969,100 direct and indirect beneficiaries.[4] Annex 2 to the funding proposal clearly sets out the basis for estimating the number of direct and indirect beneficiaries, and the underlying assumptions. Supporting tables (annex 2 to the funding proposal, pp.149–153) clearly summarize beneficiary descriptions, their selection by project activity and targets.

15. The 1,074,100 direct beneficiaries (comprising 36.18 per cent of the national population) include the entire population of four of Armenia's 10 marzes[5] (provinces), and the capital, Yerevan. Vulnerable groups at risk from climate-induced hazards, including women, youth, farmers, the elderly and people with disabilities, are expected to benefit from tailored risk communication, capacity-building, school programmes and community preparedness initiatives. Direct beneficiaries also include national and regional institutions responsible for forecasting, decision-making and early-action activation, including Armhydromet, the Ministry of Environment and the Ministry of Internal Affairs, which will benefit from training and system improvements.

16. The 1,895,000 indirect beneficiaries (comprising 63.82 per cent of the total population) will benefit from access to reliable and timely climate information, clearer early-action procedures and more timely protective measures owing to strengthened national capacities and infrastructure for early warning. Key national sectors, including agriculture, transport, energy and water management, are also expected to benefit from improved climate information systems, thereby bringing benefits for the wider population.

17. The climate rationale is clearly framed around the need to strengthen Armenia's existing EWS against increasing climate risks, provide equitable access to climate risk information, substantially reduce human and economic losses from climate-related risks and safeguard vulnerable populations. These proposed enhancements align with global best practices and with Armenia's specific needs.

18. Overall, the impact potential is considered to be high.

1.2 Paradigm shift potential *Scale: N/A*

19. Annex 2 to the funding proposal assessed Armenia's existing EWS in the context of the four pillars of the EW4All initiative and identified critical systemic and capacity gaps as a basis for project design. The three project components provide a strong foundation for supporting Armenia to transition from its current system of hazard-specific alerts to a fully integrated and coordinated MHEWS with timely alerts across all climate and disaster risks.

20. **Barriers.** Armenia's existing early warning and forecasting system provides essential weather, climate, hydrological and environmental monitoring and forecasting services. However, the current system is predominantly hazard-specific, with a limited ability to anticipate and communicate the likely impacts on people, infrastructure, livelihoods and critical

[4] Annex 15 to the funding proposal notes that beneficiary figures will be refined during the project's inception as forecast accuracy and radar coverage estimates are updated.

[5] The project has identified four marzes of Aragatsotn, Armavir, Kotayk, Shirak and the capital city Yerevan as priority areas owing to recurrent exposure to floods, droughts, hailstorms and heat stress. The climatic characteristics of these five priority areas are detailed in table 2 of annex 2 to the funding proposal.

sectors. Equipment is largely outdated and not compliant with WMO standards. Data networks are fragmented, modelling capacity is insufficient and forecasting relies on low-resolution data sets that are not specifically customized for Armenia's complex topography and localized weather dynamics. Anticipatory action protocols and climate-resilience financing mechanisms are absent. The lack of reliable climate information and actionable early warnings, and the limited reach of dissemination systems, puts Armenia's vulnerable populations at risk. Table 1 of the funding proposal clearly sets out the main financial, market, institutional, technical and knowledge barriers to effective EWS and disaster response.

21. **Adaptation strategies and actions.** The proposed shift from hazard-based alerts to a fully operational impact-based MHEWS is clearly articulated and fully aligned with the four pillars of the EW4ALL initiative. The proposed paradigm shift is comprehensively presented through three integrated component pathways as follows:[6]

(a) **Component 1** proposes to generate high-quality and usable climate and hazard information through modernizing and upgrading the outdated observation infrastructure (weather radars, automatic hydrological stations, upper air stations), strengthening data modelling systems and capacities and enhancing the quality of operational procedures. The establishment of the National Framework for Climate Services (NFCS) is a positive feature of the project as it will enable Armenia to integrate science-based climate risk information in national planning and decision-making processes. A proposed national climate outlook forum will work as an institutional interface between climate information providers and users and will help to promote uptake and sustained engagement of the NFCS.

(b) **Component 2** is critical to establishing an impact-based EWS that can deliver timely alerts on climate-related hazards. The project will focus outreach to communities and institutions in the five target areas, with a full nationwide roll-out planned for subsequent project phases. The project will establish a standard alerting protocol for priority hazards, including floods, flash floods, hailstorms, heatwaves, snowstorms, droughts and landslides, create standard operating procedures and initiate structured engagement with major telecommunications providers. Multiple communication channels (digital, mobile, broadcast, community-level mechanisms) will help to ensure that warnings are accessible, understandable and actionable across all user groups. In parallel, inter-agency coordination, capacity-building and training will enable national agencies and local authorities to interpret warnings, strengthen preparedness and response capacities, and facilitate early coordinated action across relevant government agencies. Local vulnerability and risk assessments will help to design tailored community-based disaster risk reduction strategies and enable communities to take early action.

(c) **Component 3** proposes to support foundational evidence and institutional readiness for Armenia to transition from reactive disaster responses to proactive anticipatory preparedness. This includes developing risk-informed trigger methodologies, establishing protocols for early anticipatory action and adopting a national anticipatory action road map with defined roles for agencies. While direct private investment is not anticipated during implementation, the project proposes to establish enabling conditions for future private sector participation in climate-risk financing and innovation. The project will help to develop a framework for public–private partnerships and use GCF resources to derisk and test an innovative weather-index insurance pilot programme to generate lessons and attract investment for future scale-up. The development of an integrated monitoring, evaluation, accountability and learning framework tailored to MHEWS and anticipatory action is positive and could

[6] Annex 2 to the funding proposal contains a detailed scope of the project's interventions.

help to enhance learning and strengthen the effectiveness of the overall system. This monitoring, evaluation, accountability and learning framework will be embedded within existing structures of Armhydromet, the Ministry of Internal Affairs, and municipal disaster risk management units, ensuring alignment across all project components.

22. **Knowledge and learning.** The funding proposal aims to strengthen innovation, research partnerships and regional knowledge exchange. It briefly notes plans for a national innovation platform for forecasting tools, communication interfaces and preparedness applications, support for applied research and developing long-term specialist capacities. Measures to strengthen national innovation, research and regional cooperation will be important for learning and longer-term sustainability. Complementarities with other EWS projects in the central Caucasus, and participation in other global and regional platforms, could further strengthen cross-learning on MHEWS. The funding proposal envisages regional collaboration with other ongoing GCF-funded EWS initiatives in the southern Caucasus, notably in the neighbouring countries of Georgia (FP068) and Azerbaijan (SAP046). The project is expected to facilitate cross-learning and data-sharing on climate modelling, impact-based forecasting and community-based communication protocols, contributing to a more coherent and interoperable regional climate early warning architecture. However, there is little detail on how this will be done in practice or which regional avenues will become available to advance collaboration.

23. **Sustainability and scalability.** The project is likely to be sustainable as it complements Armenia's national investment programmes, and its activities are oriented towards establishing a national framework for climate-informed early warning and anticipatory action. Armenia's engagement and participation in regional and global knowledge exchanges, peer networks and cooperation platforms will support learning and could create opportunities for future financing and technical assistance. Sustainability and scalability will also largely depend on capacity development and long-term commitment across government agencies and stakeholders at the national and local level.

24. The primary objective of the theory of change is to establish and strengthen public-good CIEWS functions, which are the responsibility of national public institutions, as a prerequisite for effective private sector engagement. Project activities could lay the foundations for long-term investment and scaling. For example, the road map (component 3) is expected to pilot scale-up pathways and test financing mechanisms for anticipatory action. The independent Technical Advisory Panel (iTAP) appreciates that these activities set a longer-term vision but without fully developed specifics on how this will become operational there is a risk that this vision could remain aspirational within the project's implementation period.

25. In response to a question raised by the iTAP, the AE clarified[7] that, in Armenia, private actors, including insurers, agribusinesses, utilities, and information and communication technology providers, lack access to the reliable, standardized and impact-based climate information needed to participate meaningfully in CIEWS-related services. Component 3 therefore focuses on improving data quality and accessibility, developing forecast-based financing and risk-transfer concepts, and reducing information and transaction barriers and reflects a realistic sequencing consistent with good adaptation practice. By putting in place the enabling conditions, the project envisages that scalable private investment and public–private partnership models will materialize progressively beyond the project period once system credibility and market readiness are established.

26. **Operations and maintenance (O&M).** GCF resources will help to procure one weather radar, while two other weather radars will be procured with funds from the Government of Armenia's Medium Term Expenditure Programme (MTEP) (2026–2028), which will allow for

[7] AE responses to iTAP questions received on 9 January 2026.

full national radar coverage across the country. Arrangements for O&M are detailed and aligned with WMO standards. This includes structured procedures, a routine maintenance schedule, local partnerships for calibration and basic maintenance, and submission of an annual O&M performance report to the Ministry of Environment.

27. The AE also clarified to the iTAP that all costs for O&M will be fully met from direct government budgetary allocations. The MTEP has introduced a forecasting and early warning system for hazardous hydrometeorological phenomena, with an approximately USD 4–4.5 million per year commitment covering both capital expenditures (including radar infrastructure) and recurrent operational expenditures of Armhydromet. This will ensure that all equipment and systems established under the project will be operated and maintained by Armhydromet as part of its core budget-financed mandate, with O&M costs embedded in future MTEP cycles.

28. Taking the above into consideration, the paradigm shift potential is considered to be medium to high.

1.3 Sustainable development potential *Scale: N/A*

29. The project is expected to directly contribute to the Sustainable Development Goals (SDGs), particularly SDG 13 (climate action), by strengthening the resilience and adaptive capacity of the country's EWS to climate-related hazards and natural disasters, and to SDG 1 (no poverty), SDG 5 (gender equality), SDG 9 (industry, innovation and infrastructure) and SDG 11 (sustainable cities and communities). The project also aligns with global frameworks, notably the Sendai Framework for Disaster Risk Reduction 2015–2030 and the Paris Agreement. It is also positioned to deliver significant economic, environmental, social and gender co-benefits.

30. **Economic co-benefits.** The funding proposal does not include a detailed cost–benefit analysis, which is consistent with the GCF's simplified approval process requirements. However, it makes a compelling case for effective EWS to reduce or avoid losses in key economic sectors, particularly agriculture and livestock, and to lower public expenditure on emergency response and post-disaster reconstruction of key infrastructure, and to improve national resilience. For example, a World Bank study estimates average losses in Armenia of USD 76.5 million per year from floods, droughts and other weather-related events from 1994 to 2013.[8] Drawing on other global studies, the funding proposal estimates that project interventions could reduce Armenia's weather-related disaster losses by approximately USD 15–20 million per year, with a substantial share of avoided damages occurring in the agriculture sector.[9] Additionally, climate-risk insurance and anticipatory financing mechanisms (component 3) could extend financial protection to thousands of climate-exposed households and enterprises.[10] Project activities could also help to generate local income and employment opportunities.

31. **Environmental co-benefits.** An upgraded MHEWS and the improved use of actionable climate information are expected to deliver significant environmental co-benefits. Project interventions could help to reduce disaster-related damage to environmental assets, safeguard natural resources and biodiversity, support sustainable water and land management, improve air quality monitoring and promote ecosystem resilience in the longer term. Training could help to build the preparedness capabilities of government agencies for effective early action in response to hazard warnings, while improved awareness of climate-related hazards could

[8] World Bank, Global Facility for Disaster Reduction and Recovery. 2018. *Disaster Risk Finance Country Note: Armenia*. Washington, DC: World Bank.
[9] Business case for DRR: Why investing in DRR makes sense (see https://www.preventionweb.net/understanding-disaster-risk/business-case-for-drr).
[10] See annex 2 to the funding proposal (feasibility study), component 3, design and insurance uptake assumptions.

sensitize communities and enhance local ownership for protecting and building the resilience of the natural environment.

32. The environmental and social action plan (annex 12 to the funding proposal) puts the project in category C (low risk). It lists three specific areas (small-scale installation, minor installation waste and e-waste, and compliance with labour standards) that carry inherent risks, categorized as minimal or low, which are reversible or easily mitigated. Activities or locations that present risks inconsistent with category C (including land access constraints, potential displacement, presence of natural habitats, cultural or intangible heritage, the presence of Indigenous Peoples, hazardous materials or community safety concerns) will be screened out through the project's exclusion list and screening criteria.

33. **Social and gender co-benefits.** End-to-end EWS will contribute to reducing harm to populations and the destruction of property through improved disaster preparedness capabilities. Enhanced preparedness to extreme events and climate risk-informed decision-making and actions are likely to positively benefit people's health and well-being, while protecting their livelihoods and assets from climate events. The development of multi-hazard vulnerability assessments, and use of participatory risk assessments and community-based disaster risk reduction planning, including through seasonal awareness campaigns, school-based disaster education and simulation drills organized in partnership with local authorities, will help to ensure that the warning systems are people-centred and that they address the specific needs of at-risk populations, including farmers, women, the elderly and people with disabilities, in each of the marzes.

34. Improved awareness on climate-related health risks, timely alerts and access to climate-risk information are expected to empower communities and enhance their preparedness and resilience to climate change impacts. The project also proposes to adopt inclusive communication formats that can improve accessibility and reach, including for vulnerable populations and people living in remote areas.

35. The gender assessment and gender action plan (annex 4 to the funding proposal) identify challenges faced by women and other vulnerable groups, including people with disabilities, the elderly, ethnic minorities, youth and marginalized communities, in high-risk areas. These include limited access to agricultural climate services, limited participation in local governance processes related to risk management, food insecurity, gender-based violence and heightened vulnerabilities to climate risks. The project's inclusive and responsive measures of improving access to early warning information, systematically bringing women and other vulnerable or marginalized groups into decision-making processes, improving their capacities to respond to warnings, customizing early warning products to reflect different user needs, and adopting differentiated and accessible communication channels could help to reduce the inequalities and disproportionate risks faced by women and vulnerable groups, reduce unpaid care burdens for women, improve safety and strengthen community participation in preparedness and early action. The project also aims to integrate gender-based violence risk mitigation measures in early warning and disaster risk reduction efforts, which could benefit women and girls.

36. The sustainable development potential is considered to be high.

1.4 Needs of the recipient *Scale: N/A*

37. **Country vulnerability and development.** Armenia is increasingly exposed to climate-related hazards, including floods and flash floods, hailstorms, droughts, heatwaves, snowstorms, landslides and severe winds, which are exacerbated by its mountainous geography and climatic variability.

38. Armenia's overall ranking of 42 out of 185 countries on the 2023 Notre Dame Global Adaptation Initiative index[11] indicates that the country is moderately prepared to tackle climate change compared with other countries. Its position of 52 in terms of readiness reflects its relatively stronger institutional and policy capacity to address climate change impacts. However, its vulnerability position, at 148, indicates that it faces significantly high exposure to climate risks and underscores the need for targeted action.

39. Annex 2 to the funding proposal highlights findings from a technical assessment that reviewed the current state of the infrastructure, the specific hazards facing the country and the institutional capacity to manage these. The findings reinforce the need for Armenia to upgrade its observation infrastructure and strengthen the capacity of its institutions to deliver timely, localized and impact-based forecasts.

40. The WMO's EW4ALL Dashboard[12] assessment of Armenia is consistent with the findings of these national assessments and confirms that the project's interventions will be focused on areas of need. The dashboard indicates an overall maturity level of 2, reflecting early stage to intermediate development across key components of a MHEWS, but finds that the main gaps are in hazard monitoring, impact-based forecasting and operational warning services. Importantly, the dashboard confirms that Armenia's challenges stem from structural and investment gaps typical of mountainous, climate-vulnerable countries with limited fiscal space, and are not related to a lack of institutional commitment.

41. **Financial needs.** Early warning services continue to function as essential public goods, with limited revenue-generating potential. In recent years, Armenia has upgraded some of its hydrology and meteorology infrastructure with public resources and donor support. However, the resources required to transition to an end-to-end impact-based warning service exceed the available public resources, justifying the need for GCF concessional resources to enable Armenia to pursue options for private sector engagement (as envisaged in component 3) while putting in place the enabling environment and institutional readiness to attract funding from other sources and to sustain improvements.

42. The needs of the recipient are considered to be high.

1.5 Country ownership *Scale: N/A*

43. A no-objection letter has been received from the national designated authority (annex 1 to the funding proposal). Co-financing commitment letters for in-kind contributions have also been received from Armhydromet and EPIU (annex 5 to the funding proposal).

44. **Alignment with national priorities.** The funding proposal is strongly aligned with national priorities and policy frameworks, including Armenia's Transformation Strategy 2050 and its nationally determined contributions, both of which explicitly emphasize the need to reduce vulnerability to climate risks and strengthen EWS. The proposed project will help to advance the priorities of Armenia's national adaptation plan, which include anticipatory action and EWS as core objectives. The project is also aligned with other relevant country priorities, including the Disaster Risk Management Strategy and Action Plan, the National Platform for Disaster Risk Reduction, the NFCS, and sector-specific policies such as the Landslide Disaster Management Concept. The Government of Armenia's MTEP, which proposes to allocate resources for EWS development, is also a strong indication of country ownership. As the EWS programme is classified as a mandatory expenditure, it will automatically be carried forward into future MTEP cycles.

[11] See footnote 9 of the funding proposal: https://gain-new.crc.nd.edu/country/armenia.
[12] See https://earlywarningsforall.org/site/early-warnings-all/dashboards/early-warnings-all-dashboard.

45. **Engagement with stakeholders.** Annex 16 to the funding proposal is comprehensive and demonstrates that the proposal was designed through a participatory process. It presents a stakeholder mapping, confirms that the design process included consultations with 222 stakeholders through in-person workshops and remote follow-up consultations at both the national (in March 2025) and regional level (in April 2025), clearly captures key stakeholder concerns and shows how the funding proposal will address these across its three components.

46. Stakeholders consulted included representatives of communities, non-governmental organizations, academia, national and local authorities, environmental experts, youth groups, women, elderly stakeholders, and people from vulnerable and marginalized groups. While the consultations did not identify groups meeting the GCF Indigenous Peoples Policy criteria, relevant civil society organizations were invited to ensure inclusiveness. Annex 16 to the funding proposal also includes a stakeholder engagement plan to be followed during project implementation that considers sexual exploitation, abuse and harassment risks, integrates a community engagement plan and allocates responsibilities for monitoring both the stakeholder and the community engagement plans. A positive feature is the project's planned approach to strengthen last-mile engagement through collaborative partnerships so that early warning communication and preparedness measures effectively reach the most vulnerable groups across Armenia.

47. However, there is limited reference to engaging the private sector in consultations during the design of the project. The stakeholder mapping only lists insurance companies as potential stakeholders for component 3, with limited reference to other private sector actors (such as mobile operators or information and communication technology providers) or concrete details on their involvement in dissemination activities under component 2. The funding proposal also lacks any assessment of the private sector's interest or capacity to engage in MHEWS in Armenia. The AE could consider developing a more comprehensive strategy for private sector engagement during the early phases of implementation.

48. **Capacities to deliver.** The institutional arrangements for the project are clearly set out and reflect strong country ownership. The arrangement of having two government agencies as EEs could further strengthen national institutional ownership and build long-term technical capacity within Armenia's public sector.

49. The EPIU, a State agency under the Ministry of Environment, became a direct access entity following accreditation to GCF in February 2019 for micro projects under environmental and social safeguards standards category B. The EPIU is also the AE for another GCF project (SAP059)[13] and has experience of managing projects and collaborating with financial institutions, insurers, telecommunications operators and technology providers. It is therefore well positioned to serve as the AE for the project and the EE for component 3. Since its establishment as a State non-profit organization in 2020, Armhydromet has been responsible for managing Armenia's weather forecasting and hydrometeorological systems and early warning services, making it well placed to execute components 1 and 2.

50. The project proposes to put in place institutional arrangements to coordinate all three components across relevant ministries. The strengthened NFCS, ongoing stakeholder engagement mechanisms and institutionalized coordination across ministries and administrations of marzes are designed to ensure long-term country ownership and sustainability.

51. A project steering committee, chaired by a senior representative of the Ministry of Environment, will provide strategic oversight, ensure coordination between relevant ministries

[13] SAP059: Fueling Green Recovery in Armenia – advancing forest infrastructure and creating sustainable jobs for rural communities was approved at the forty-third meeting of the Board (October 2025) and is currently under implementation.

and stakeholders, and guide high-level decision-making. The project steering committee includes representation of the Ministry of Internal Affairs, which has oversight of disaster risk management and EWS, the Ministry of Territorial Administration and Infrastructure, which oversees regional governance and coordinates activities, the Ministry of Economy, which leads economic policy development, and representatives of targeted regional and local authorities, civil society and the private sector. A technical advisory expert group of national experts in disaster risk management, EWS and climate resilience will provide specialist input to the project steering committee.

52. The project is consistent with Armenia's ongoing efforts to strengthen its early warning and disaster preparedness and complements other donor funded interventions. Table 1 (annex 2 to the funding proposal) summarizes EWS projects and programmes in Armenia, which range from supporting the modernization of EWS infrastructure to integrating early warning elements into broader climate resilience, forestry or disaster risk reduction programmes.

53. Country ownership is considered to be high.

1.6 Efficiency and effectiveness *Scale: N/A*

54. **Co-finance.** The co-finance ratio of 1:0.05 is low, with USD 500,000 provided as a co-finance contribution from the Government of Armenia through Armhydromet and EPIU, and GCF grant funds of USD 9,499,990 accounting for the majority of the balance.

55. Constrained public resources, limited commercial returns, and lack of private investment limit Armenia's ability to upgrade its hydrometeorological and early warning systems. While Armenia has taken steps to strengthen its EWS using donor resources and domestic funds, its current infrastructure does not meet the country's requirements for effective early warning and action in the context of intensifying climate risks. Armhydromet's annual budget of approximately USD 3.2 million is mainly absorbed by staff costs and statutory expenditures, which account for more than 90 per cent of total spending, leaving little scope for system upgrades. Consequently, no major modernization of the infrastructure has been undertaken in the past three decades.

56. **Cost effectiveness and cost efficiency.** The economic justification for the project is strong, taking into consideration Armenia's high exposure to climate risks and economic losses from climate-related events. The funding proposal refers to studies by WMO which show that investments in EWS deliver high economic returns, as each dollar invested yields an average of USD 9 in benefits from avoided losses, reduced disaster recovery expenditures and enhanced productivity in weather-sensitive sectors.[14] Other global studies suggest returns of between 1:4 and 1:20 from effective EWS, depending on the type of hazard and country exposure.[15] The cost per direct beneficiary of approximately USD 9 compares well with international benchmarks and other similar EWS projects supported by GCF.

57. The project's financing structure is well aligned with its three components. The bulk of GCF resources (60 per cent under component 1) are directed towards modernizing the EWS infrastructure, which is justifiable given the comparatively higher capital costs associated with new equipment and technology and building institutional capacities. The remainder of the budget is allocated to strengthening communication protocols and dissemination (23 per cent for component 2) and laying the foundation for anticipatory action and climate-risk financing (16 per cent for component 3), leaving just under 1 per cent for project management,

[14] Triple dividends of early warning systems and climate services (see https://wmo.int/media/magazine-article/triple-dividends-of-early-warning-systems-and-climate-services).
[15] See footnote 68 of annex 2 to the funding proposal: UNDP Climate Promise (2022). Climate Information and Early Warning Systems (CIEWS). UNDP.

monitoring and evaluation. The detailed budget across the years is included in annex 3 to the funding proposal.

58. The exit strategy is sound and includes technical, institutional, financial and coordination measures to enable Armenia to evolve its early warning capabilities. The iTAP understands that the full-scale implementation of certain project activities exceeds the project's budgetary scope and that the project is designed to lay the groundwork for future deployment at scale, including the extended reach of cell broadcasting services under output 2.1. Annex 2 to the funding proposal broadly identifies several options for funding future phases, including through the MTEP, and the iTAP notes that details are planned to be developed during the project's inception phase and implementation.

59. The efficiency and effectiveness are considered to be medium to high.

II. Overall remarks from the independent Technical Advisory Panel

60. The project design effectively targets key gaps to support Armenia's transition towards a fully functional, people-centred, end-to-end MHEWS in line with global EW4ALL objectives. Improvements realized through the project will help to reduce climate-induced disaster losses, protect lives and livelihoods, and strengthen national resilience across critical sectors, including agriculture, health, water resources and energy. The project could also contribute to regional knowledge-sharing on climate resilience and EWS.

61. The iTAP notes that this project is intended to be a catalytic first phase that will introduce system-wide change through technical upgrades and modernization of the hydrometeorological observation infrastructure, introduce high-resolution numerical weather prediction models, strengthen the capacities of key agencies, establish the National Framework for Climate Services, improve inter-agency coordination, embed climate risk information into sectoral planning and improve community-level communication and preparedness through participatory approaches.

62. By introducing innovative financial mechanisms, including through the piloting of weather-index insurance models, the project could create the enabling conditions for future phases to be delivered through government-led efforts and initiatives supported by public–private partnerships, enabling climate-resilient financing and advanced warning technologies to be scaled up across the country.

63. The successful implementation of this first phase, backed by emerging evidence, lessons learned and concrete financing partnerships, will therefore be critical to moving ahead with any future plans for a full roll-out across Armenia.

64. The iTAP recommends that the Board approve this funding proposal.

Response from the accredited entity to the independent Technical Advisory Panel's assessment (SAP068)

Proposal name:	Scaling up national adaptive capacities for climate change-driven natural hazards through strengthening monitoring and early warning systems
Accredited entity:	Environmental Project Implementation Unit State Agency of the Ministry of Environment of the Republic of Armenia (EPIU)
Country/(ies):	Armenia
Project/programme size:	Micro

Impact potential
The AE welcomes iTAP's assessment that the project demonstrates high impact potential. We fully concur that Armenia's increasing exposure to climate-induced hazards, combined with vulnerable mountainous and rural communities, necessitates a strengthened national multi-hazard early warning system. The project's focus on transitioning from hazard-based alerts to impact-based warnings is expected to substantially reduce loss of life, livelihoods, and infrastructure damage. The AE appreciates iTAP's recognition of the project's robust climate rationale, strong beneficiary analysis, and alignment with GCF adaptation results areas, and shares iTAP's view that the proposed interventions address clearly identified and urgent national needs.
Paradigm shift potential
The AE acknowledges iTAP's assessment of medium-to-high paradigm shift potential and welcomes the constructive observations regarding sequencing and operational realism. The project is deliberately designed as a catalytic first phase that establishes the public-good foundation (data quality, institutional coordination, and impact-based forecasting) required for longer-term systemic change. We agree that private sector engagement is enabled rather than immediate, reflecting Armenia's current market readiness. The AE shares iTAP's view that the project's alignment with EW4All and the Global Framework for Climate Services, combined with anticipatory action pilots, creates credible pathways for scaling and future investment beyond the project period.
Sustainable development potential
The AE welcomes iTAP's conclusion that the project has high sustainable development potential. We concur that strengthened early warning services will generate significant economic, environmental, social, and gender co-benefits, particularly for climate-sensitive sectors such as agriculture, water, health, and energy. The AE appreciates iTAP's recognition of the project's alignment with the Sustainable Development Goals, the Sendai Framework, and the Paris Agreement, as well as the strong integration of gender-responsive and inclusive

approaches. These co-benefits are central to the project's design and reflect the AE's commitment to people-centred, equitable, and climate-resilient development outcomes.
Needs of the recipient
The AE fully agrees with iTAP's assessment that Armenia's needs are high. Despite relatively strong institutional readiness, the country faces significant vulnerability to climate risks due to its geography, climatic variability, and limited fiscal space. The AE welcomes iTAP's recognition that Armenia's challenges stem from structural investment gaps rather than lack of commitment. The project directly addresses these gaps by upgrading critical monitoring and forecasting infrastructure and strengthening institutional capacities. Consistent with iTAP's assessment, the AE views GCF concessional support as essential to enable Armenia to transition to an end-to-end impact-based early warning system.
Country ownership
The AE appreciates iTAP's assessment that country ownership is high. The project is firmly anchored in Armenia's national strategies, including the Transformation Strategy 2050, NDCs, national adaptation priorities, and disaster risk management frameworks. The AE welcomes iTAP's acknowledgement of strong institutional arrangements, stakeholder engagement, and the Government's commitment through MTEP allocations for early warning systems. We also take note of iTAP's observation regarding private sector engagement and commit to strengthening structured engagement with private actors during early implementation, consistent with project sequencing and national market readiness.
Efficiency and effectiveness
The AE welcomes iTAP's assessment of medium-to-high efficiency and effectiveness. We concur that the project represents a cost-effective use of GCF resources, given Armenia's high exposure to climate risks and the strong economic returns associated with early warning investments. The AE appreciates iTAP's recognition of the sound financing structure, clear prioritization of capital-intensive infrastructure, and robust exit strategy. The project is designed to embed operation and maintenance within national budget systems and institutional mandates, ensuring sustainability beyond the project period while laying the groundwork for future scale-up and complementary financing.
Overall remarks from the independent Technical Advisory Panel:
The AE sincerely welcomes iTAP's overall assessment and recommendation for board approval. We appreciate iTAP's recognition that the project design addresses critical systemic gaps and represents a catalytic first phase toward a fully functional, people-centred, end-to-end MHEWS aligned with EW4All objectives. We share iTAP's view that this phase is foundational – modernizing hydrometeorological infrastructure, operationalizing high-resolution forecasting, institutionalizing the National Framework for Climate Services, and embedding climate risk information into sectoral planning and community preparedness.

We concur that the project's catalytic nature places particular importance on effective implementation, evidence generation, and partnership building. The AE is fully committed to ensuring rigorous execution, robust monitoring, and documentation of lessons learned to inform subsequent phases and support structured scale-up, including through public–private partnerships and innovative financial mechanisms such as weather-index insurance.

We also appreciate iTAP's recognition of the project's potential to contribute to regional knowledge exchange. The AE will actively promote cross-border learning and alignment with global good practice, reinforcing Armenia's role in advancing climate resilience in mountainous and hazard-prone contexts.

The AE shares iTAP's assessment that successful delivery of this first phase will be decisive for enabling future government-led expansion. We remain committed to ensuring sustainability through institutional strengthening, national budget integration, and strategic partnerships, consistent with the vision reflected throughout this proposal.

ANNEX 4: GENDER ASSESSMENT AND ACTION PLAN

"Scaling up national adaptive capacities for climate change-driven natural hazards through strengthening monitoring and early warning systems" grant project

"Environmental Project Implementation Unit" State Agency of the Ministry of Environment, Republic of Armenia

2025

Contents

1. Introduction: Relevance of gender mainstreaming for the project

This Gender Assessment and Action Plan (GAAP) has been developed to ensure that gender perspectives are systematically and effectively incorporated into the design and implementation of the "Scaling up national adaptive capacities for climate change-driven natural hazards through strengthening monitoring and early warning systems" project in Armenia, which is supported by the Green Climate Fund (GCF). The project aims to enhance Armenia's resilience to climate-related hazards by modernizing multi-hazard early warning systems, improving the dissemination of climate risk information, and establishing sustainable funding mechanisms for disaster preparedness and response.

The various effects of climate change on different groups of people have been well documented. In the case of Armenia, women, particularly those living in rural areas, face specific challenges due to long-standing gender inequalities, limited opportunities for decision-making, and restricted control over productive resources and finances. These factors can hinder women's capacity to anticipate, prepare for, and respond to climate-related events. At the same time, women have a crucial role in fostering community resilience and play a significant part in the success of efforts to provide early warnings and reduce risks.

This Gender Assessment is based on national and international policies, including the Law on ensuring equal rights and opportunities for women and men in Armenia (2013), the Gender policy strategic action plan for 2019-2023, the National adaptation plan, and the Fourth National communication under the United Nations Framework Convention on Climate Change (UNFCCC). It also aligns with the Gender Policy and Action Plan of the Green Climate Fund for 2020-2023, which promotes inclusive climate finance and gender equality.

Using recently collected gender-disaggregated data and consultations with stakeholders, this assessment identifies specific gender gaps, risks, and opportunities in the project context and proposes measures to address them. An accompanying Action Plan details targeted activities to promote inclusive participation, capacity building that is responsive to gender needs, equitable access to information on climate change, and strengthened mechanisms for integrating gender considerations throughout the project implementation process.

By implementing this project, Armenia's ability to adapt to climate-related natural disasters will be strengthened, while also contributing to national and international efforts towards gender equality and sustainable development.

The Gender Development Index (GDI) measures gender gaps in human development outcomes such as health, education, and command over economic resources. As of the 2022 Human Development Report, Armenia’s GDI value was 0.980, with a female Human Development Index (HDI) of 0.754 compared to 0.770 for males—reflecting persistent gender disparities, particularly in income and labor force participation. While Armenia is classified in the “medium equality” GDI group, rural and low-income women continue to experience structural disadvantages across all dimensions of human development.
In terms of economic empowerment, Armenia’s female labor force participation rate was 46.5% in 2023, compared to 66.6% for men. Women earn approximately 36% less than men, and only 18% of agricultural landowners are women, limiting their access to agricultural subsidies, credit, and climate-resilient technologies. Women are underrepresented in technical sectors critical to climate resilience, including meteorology, hydrology, and emergency services.

Food Insecurity and malnutrition remain key concerns, especially for rural women. According to the FAO (2022), 12.7% of Armenia’s population experienced moderate or severe food insecurity. Women-headed households—comprising nearly 19% of all households—are disproportionately affected due to lower income levels and caregiving responsibilities.

Gender-based violence (GBV) is a widespread issue. A 2021 nationwide survey revealed that over 1 in 4 women (27%) in Armenia have experienced some form of physical, psychological, or sexual violence in their lifetime. GBV rates tend to spike during and after natural disasters, further compounding women's vulnerability.

Gender inequality in Armenia is a cross-cutting issue that amplifies climate vulnerability. Women are less likely to receive early warning information, participate in decision-making related to disaster preparedness, or access post-disaster recovery support. Their roles in caregiving, food production, and water collection make them more exposed to climate-related shocks such as floods, hailstorms, and droughts.

Addressing these entrenched inequalities is essential to building the resilience of Armenia's population and ensuring the effectiveness and inclusivity of climate adaptation interventions. Integrating gender-responsive approaches into all stages of the early warning systems Project cycle will improve risk communication, foster equitable participation, and contribute to Armenia's commitments under the SDGs, the Sendai Framework, and the Paris Agreement.

The findings presented in this chapter provide the foundation for the Gender Action Plan, which outlines specific measures to implement gender equality in the project's design, implementation, monitoring, and long-term sustainability. These measures aim to contribute significantly to Armenia's commitments to gender equity, climate resilience, and sustainable development through the project.

2. Methodology

The Gender Assessment describes the gender context, gender issues (gender equality and gender equity), and gender vulnerabilities (gender relations, access and power) relevant to the project and gender opportunities (recommendations). The Assessment is informed by the following methodological steps:

1. Primary data collection including an in-country stakeholder consultation workshop, interviews and questionnaire responses.
2. Comprehensive desk review of existing literature, draft Gender Assessment Report prepared by WMO and gender analysis of the Feasibility Study conducted for the proposed Project.
3. The literature review was conducted on climate change adaptation, climate information and early warning systems, disaster risk reduction, and hydrometeorological systems in relation to gender and the context of Armenia. Literature was drawn from: research reports from international organisations, multilateral development banks, journals and grey literature (government reports, policies and plans).
4. The stakeholder consultations, literature review, gender analysis of the Feasibility Study and analysis of the draft Gender Assessment Report provided useful data and information to inform the socioeconomic and gender baseline (Section 3), the political, legal and institutional environment in relation to gender priorities (Section 4), gender roles, gaps and challenges in the five Global Framework for Climate Services priority sectors (Section 5) and gender-specific climate change vulnerabilities and adaptation needs (Section 6) in Armenia.
5. Based on the information detailed in the previous sections, Section 6 presents gender-responsive recommendations and interventions to be incorporated within the Project to ensure that gender concerns are addressed, existing gender inequalities are not reinforced, and that greater resilience is possible for the entire population of Armenia.

The development of the Gender Assessment and Action Plan was grounded in an inclusive consultation process that actively engaged women, women-headed households, and women's civil society

organizations at multiple stages of project preparation. During the formulation of the Funding Proposal and the Feasibility Study, women from climate-vulnerable rural communities participated in community discussions, focus group exchanges, and key informant interviews. These consultations allowed women to articulate their experiences with climate hazards, their information needs during emergencies, and the specific constraints they face in accessing early warning information due to caregiving roles, mobility limitations, and gendered workloads. Women-headed households who frequently bear disproportionate economic and caregiving burdens provided insights into livelihood vulnerabilities, time poverty, and barriers to participating in climate-risk decision-making processes.

National-level workshops and technical meetings also included representatives from women's organizations, gender equality NGOs, and advocacy groups with experience working in rural areas and with vulnerable populations. These actors contributed perspectives on structural gender inequalities, gaps in institutional response mechanisms, and the need for gender-sensitive communication channels in early warning systems. Their feedback helped identify sectoral disparities, such as women's limited access to agricultural climate services, limited participation in local governance processes related to risk management, and differentiated impacts of extreme weather events on women's economic and social security.

Inputs gathered through these consultations directly informed the gender analysis, shaped the identification of gender-differentiated climate vulnerabilities, and guided the design of targeted measures included in the GAP. This participatory process ensured that gender-responsive approaches are embedded across project outputs - from risk communication and community preparedness to the design of capacity-development activities and feedback mechanisms, reinforcing the project's commitment to equitable access and inclusive early warning services.

3. Socioeconomic and gender baseline in Armenia

3.1 Background

Armenia is a landlocked country located in the South Caucasus region. It regained its independence after the dissolution of the Soviet Union in 1991. As of January 2025, the population of Armenia is approximately 2.96 million, with 52% of the population being female and 48% being male. The majority of the population, about 63%, resides in urban areas, especially in the capital city, Yerevan. However, rural communities still face higher levels of poverty, lack of access to services, and increased exposure to climate-related risks.

Though the majority (98.1%[1]) are ethnic Armenians, Armenia's population also includes several ethnic minority groups (1.9%), such as Yezidi, Kurdish, Assyrian, Molokan, and Russian-speaking communities, many of whom reside in remote rural settlements and are disproportionately exposed to climate and disaster risks. These communities often rely on oral communication traditions, local leaders, and informal information networks, and may face language-related barriers when accessing official forecasts or early warning messages. Young people, particularly in rural areas, experience limited livelihood opportunities, increasing out-migration pressures and decreasing participation in community-level preparedness initiatives. Persons with disabilities and elderly individuals living alone face additional barriers to mobility, emergency response, and communication access, while households in highland and hard-to-reach areas frequently experience isolation during severe weather events. These intersecting factors contribute to differentiated climate vulnerabilities and have been explicitly considered in the project's design, communication strategy, and participation mechanisms to ensure inclusive access to early warning services.

[1] Government of the Republic of Armenia, "Demographics – Ethnic Breakdown," https://www.gov.am/en/demographics/

The average annual population growth rate between 2015 and 2020 was 0.2%, which is lower than the global average. This reflects Armenia's demographic challenges, including emigration and an aging population. These trends present significant challenges for the country's economic resilience and demand for public services, such as healthcare, education, water, and social protection.

In 2023, Armenia's Gross National Income per capita was approximately USD 6,880, while its Gross Domestic Product reached approximately USD 20 billion with an annual growth of around 7%. This growth was driven largely by services, technology, and remittances. Although poverty rates have declined gradually, the most recent survey (2022) found that 23.5% of the population still lives below the poverty line. There are stark disparities between urban and rural areas, with rural communities accounting for approximately 35% of the total population and hosting over 45% of Armenia's poor.

Gender gaps in economic participation continue to exist. According to data from the World Bank (2023), approximately 66.6% of the male population is engaged in the labor force, compared to approximately 46.5% for women. Women are more likely to be employed in sectors that offer lower salaries, such as education, healthcare, and social work. They are also underrepresented in critical sectors for climate adaptation, including infrastructure, water management, and meteorology.

This socioeconomic vulnerability, particularly in rural and disadvantaged communities, exacerbates Armenia's exposure to the impacts of climate change, including floods, droughts, and landslides. Therefore, it is essential to ensure equitable access to essential services, climate-related information, and economic opportunities in order to build inclusive and resilient communities.

3.2 Composite indices

Human Development Index (HDI)

The Human Development Index (HDI) is a composite indicator that assesses long-term progress on three fundamental dimensions of human development: longevity, knowledge, and standard of living. In 2022, Armenia's HDI was 0.759, placing it at 83rd position out of 191 countries worldwide. The HDI for Armenia is higher than the regional average for Europe and Central Asia (0.779), but it is still below the average HDI of high-income countries (0.895).

Inequality-Adjusted Human Development Index (IHDI)

The Inequality-Adjusted Human Development Index (IHDI) takes into account inequality in the distribution of health, education, and income across the population. For Armenia, the total loss due to inequality has been estimated at 13.7%, which is below the global average of 20.2%. This reflects relatively moderate levels of inequality compared to other countries at a similar level of development.

Gender Development Index (GDI)

The Gender Development Index (GDI) measures differences between women and men in terms of the HDI's three dimensions. In Armenia, the 2022 GDI values for females and males are 0.754 and 0.770, respectively, resulting in an overall GDI of 0.980. This places Armenia in GDI Group 2, consisting of countries with medium-to-high levels of gender equality in terms of human development. Despite positive overall progress, there are still notable gaps in labor force participation, wages, and leadership positions between women and men.

Gender Inequality Index (GII)

The Gender Inequality Index (GII) evaluates differences in gender equality across various indicators, such as employment, education, political representation, and health. Armenia's GII value indicates that there is a need for further efforts to achieve greater gender equality.

The Gender Inequality Index (GII) reflects gender-based inequalities in reproductive health, empowerment, and economic activity. Armenia's GII score for 2022 was 0.250, placing it in the 57th position out of 170

countries, indicating better performance compared to the global average, but revealing persistent disparities in female representation in politics, educational attainment, and labor force participation.

Multidimensional Poverty Index (MPI)

The Multidimensional Poverty Index (MPI) identifies overlapping deprivations in health, education, and standard of living. In Armenia, the latest available data (2022) indicate that 5.4% of the population is classified as multidimensionally poor, with an additional 8.1% vulnerable to multidimensional poverty. While the national MPI is significantly lower than regional averages, rural areas, especially remote mountainous regions, continue to experience significant levels of multidimensional poverty disproportionately impacting women-headed households.

3.3 Education

Since achieving independence in 1991, the government of Armenia has prioritized expanding access to education as a crucial component of national development. The country has successfully achieved near-universal enrollment at the primary level, with nearly equal enrollment rates for girls and boys: in 2023, approximately 98% of girls and 97% of boys were enrolled in elementary education. Secondary enrollment rates remain high at 91% for girls and 89% for boys. However, there are challenges in ensuring equal retention rates, particularly for students from rural and low-income backgrounds.

At the tertiary education level in Armenia, there has been notable progress in reducing gender disparities. In 2023, women accounted for 58% of students enrolled in universities, a reversal from the previous trend where male students outnumbered female students. However, gender segregation persists in certain fields of study. Women are overrepresented in fields such as education, health, and social science, while men are dominant in engineering, technology, and the natural sciences, which are critical for employment in areas such as climate resilience, infrastructure development, and disaster risk management.

Regarding overall educational attainment among adults aged 25 years and above, 34% of women have completed tertiary education compared to 29% of men. This indicates a gender gap in favor of women in higher education. Despite these positive developments, economic, social, and geographical barriers continue to affect certain groups, particularly rural women. These barriers include higher dropout rates due to early marriage, childcare responsibilities, and economic difficulties.

Adult literacy rates in Armenia are higher than global averages. The latest data from UNESCO (2023) shows that 99.7% of women and 99.8% of men aged 15 and over are literate. However, functional literacy – the ability to apply reading, writing, and numerical skills in daily activities – is lower in rural areas, particularly affecting women engaged in subsistence farming and informal employment.

Gender stereotypes still influence attitudes towards education investment. While women's education is improving, societal expectations often steer women towards less remunerative fields, limiting their access to higher-paid, technical, and leadership positions in climate-related industries.

It is important to note that gender disparities in educational specializations and literacy levels have an impact on women's and men's ability to access, understand, and act on climate information and early warning systems. The underrepresentation of women in technical training programs related to hydrology, meteorology, and disaster risk management limits their direct involvement in climate adaptation efforts. To ensure that women can contribute effectively and benefit from resilience initiatives in Armenia, it is crucial to strengthen gender-responsive educational pathways and technical skills development.

3.4 Health and well-being

Life expectancy is a key indicator of general mortality and the quality of life of a population. According to the latest data, life expectancy at birth in Armenia is 71.5 years for males and 78.3 years for females, which is slightly lower than the average in Europe (74.5 years and 81.7 years for males and females, respectively).

Despite significant progress in public health indicators, there are still challenges in access to health services, particularly in rural areas and for vulnerable groups. The report highlights these challenges and suggests possible solutions to address them.

Maternal and infant health indicators in Armenia show positive trends, but there are still significant disparities. The maternal mortality rate (MMR), which measures the number of maternal deaths per 100,000 live births, has decreased from 29 in 2015 to 24 in 2023. Although Armenia's MMR is below the global average of 211 and close to the regional average of 13, further reductions will require sustained investment in maternal healthcare services, particularly in rural areas.

Despite improvements, access to healthcare remains unequal. According to the 2021 Armenia Demographic and Health Survey, approximately 21% of women face difficulties accessing healthcare due to financial constraints, distance from facilities, and a lack of medical staff in rural regions.

The total fertility rate in Armenia is 1.6 children per woman in 2023, which is below the replacement rate of 2.1. This is consistent with the demographic trends observed in Eastern Europe and Central Asia. The fertility rate is slightly higher in rural areas at 1.9 compared to urban areas at 1.5. Lower educational attainment correlates with higher fertility rates.

Infant mortality rates have continued to improve in Armenia. The rate decreased from 11.7 per 1,000 live births in 2010 to 8.4 per 1,000 in 2022, while the under-five mortality rate also declined from 13.7 to 10.1 over the same period. Nevertheless, children from low-income households and rural areas continue to face higher risks of mortality and preventable diseases compared to those in urban areas.

Nutrition continues to be a significant concern. According to data from the World Bank and UNICEF (2022), approximately 9% of children under the age of 5 in Armenia have stunted growth (low height for age), and approximately 4% have wasted growth (low weight for height). Stunted growth is more prevalent in rural areas and among families with lower incomes. Women's nutritional status is also a challenge: approximately 11% of women of reproductive age in Armenia are underweight, and there is a rise in overweight and obesity, creating a dual burden of malnutrition.
The 2022 Global Hunger Index ranks Armenia as being in the "low hunger" category with a score of 8.4 out of 100, indicating improvement in food security when compared to global averages. However, food insecurity persists as a localized issue, especially during economic shocks and in remote areas. The effects of climate change, such as droughts and crop failures, are anticipated to exacerbate food security risks, especially for marginalized communities.

Malnutrition, lack of access to healthcare, and disparities in rural health not only affect the well-being of individuals, but also hinder Armenia's broader development objectives. These issues are further exacerbated by climate change and require an integrated approach addressing health, nutrition, and resilience building at both the national and community levels.

3.5 Work and economic empowerment

In Armenia, there are still significant gender divisions in the labor market, which are reinforced by traditional societal norms and patriarchal values. While women's participation in the workforce has gradually increased over the past decade, there are still substantial disparities. As of 2023, only 56% of women were employed compared to 66.6% of men. This gap is particularly pronounced for women aged 30-49, who frequently juggle professional and extensive domestic responsibilities outside of work.

Women play a significant role in subsistence farming and informal economic activities, particularly in rural areas. However, much of their contribution remains unacknowledged and uncompensated. According to data from the Statistical Committee of Armenia, women comprise 45% of the agricultural workforce.

However, household production, caring responsibilities, and domestic duties are often not included in official labor force statistics. Time-use studies have shown that women in Armenia devote twice as many hours to unpaid household and care-related tasks compared to men. This limits their ability to fully participate in paid employment and professional development.

Despite a reported overall unemployment rate of 12.6% for women and 15.4% for men in 2023, these figures mask significant levels of vulnerable and informal employment, especially in rural areas. Approximately 47% of women in employment engage in vulnerable forms of work, such as self-employment in agriculture, informal trading, and low-paid services, often without access to social benefits such as pensions, maternity leave, and health insurance. This employment is more common among rural women (52%), compared to urban women (42%).

Another significant issue is income inequality. On average, women in Armenia earn 36% less than men, and the wage gap is even wider in certain sectors such as construction, finance, and information and communication technology. Only 29% of businesses in Armenia are owned by women, and women are under-represented in senior positions and decision-making roles in both public and private sectors.

Women's financial dependence on male household income limits their financial independence and increases their vulnerability, especially in cases of domestic abuse or family breakdown. Access to credit, land ownership, and other financial services remains unequal, with women owning only 18% of registered plots of land and accounting for a small proportion of formal bank loans.
Microfinance programs have been increasingly important in promoting women's entrepreneurial activity in Armenia. Local and international initiatives, such as the "Women in Business" program by the European Bank for Reconstruction and Development (EBRD) and UN Women-funded rural finance projects, have helped to increase access to small business loans and financial education. However, these initiatives still reach only a small percentage of rural women due to structural barriers like collateral requirements and lack of financial literacy.

Promoting women's economic empowerment is crucial not only for achieving gender equality, but also for realizing Armenia's broader development objectives, including reducing poverty, diversifying the economy, and strengthening community resilience to climate change. Enhancing women's access to productive assets, financial services, and quality employment opportunities will be essential for Armenia's inclusive and sustainable growth.

3.6 Governance, influence and decision making

In the Republic of Armenia, traditional social norms and cultural expectations continue to influence gender roles, often restricting women's involvement in leadership positions and decision-making processes. Despite legal frameworks that promote gender equality, deeply rooted patriarchal attitudes remain prevalent, particularly in rural and more conservative communities.
At the local government level, there is a significant underrepresentation of women. Following the local self-government elections in 2021, women accounted for only 12% of mayors and 32% of members of local councils nationwide. In rural and mountainous areas, the representation of women is even lower.

While Armenia's Electoral Code provides incentives for political parties to include women in their candidate lists, implementation of these measures at the local level is inconsistent, and women continue to face social and institutional obstacles that hinder their full participation in political processes.

It is encouraging to note that legislative reforms have been implemented to promote women's political representation. In 2021, an amendment to the electoral code mandated that at least one-third of candidates on proportional party lists be women, contributing to a modest increase in the number of women elected. However, despite these positive developments, women candidates continue to face challenges, including

limited access to funding for campaigns, weaker political networks, and gender stereotypes that can discourage assertive political participation.

At the national level, Armenia has made significant progress towards achieving gender parity in the parliament. As of 2023, women hold 35% of seats in the National Assembly, a significant increase from just 11% in 2012. This positive development has been driven by the introduction of electoral quotas and the sustained advocacy of women's rights organizations. However, political representation alone does not automatically lead to substantive influence. As of early 2024, only 21% of ministerial and deputy ministerial positions are occupied by women, and they are underrepresented in senior decision-making positions in areas such as defence, energy, and infrastructure.

Social norms around leadership and public involvement continue to pose challenges. Many women, especially in rural areas, express a lack of self-confidence, limited opportunities for political guidance, and societal pressures to prioritize family obligations over public service. Furthermore, gender-based discrimination and online abuse have emerged as significant obstacles for women leaders and advocates, potentially discouraging wider participation.

Substantial progress will necessitate not only formal representation through quota systems and legislative reforms, but also a cultural change towards valuing women's perspectives equally at all levels of public and political life. Enhancing leadership training, mentoring programs, civic awareness, and measures to protect against gender-based abuse in public life are crucial to ensuring that women's involvement is both genuine and effective.

Table: Women's Representation in Decision-Making Structures in Armenia (2023–2024)

Level of Governance	**Women's Representation (%)**	**Notes**
Local councils (community councils)	32%	Lower in rural and mountainous regions
Mayoral positions (Community Heads)	12%	Significant underrepresentation in rural areas
National parliament (National Assembly)	35%	Increased due to electoral quotas
Ministerial and Deputy Ministerial positions	21%	Women underrepresented in sectors like defense, energy
Political party leadership	Varies, estimated <20%	Few women lead major political parties

3.7 Land and assets ownership

Land plays a crucial role as a productive asset in Armenia, especially for rural communities where agriculture remains an important source of livelihood. While Armenia has legal frameworks in place that recognize women's right to own land, in practice, there are still significant gender disparities. Cultural norms and traditional inheritance patterns often favor male heirs, leading to lower rates of female land ownership and control. Additionally, women are underrepresented in decision-making regarding land management, both at the household and community level. Limited access to land has a negative impact on women's financial stability, restricting their economic opportunities and perpetuating broader gender inequality in rural areas.

3.8 Gender-based violence

Violence against women and girls in Armenia remains a significant and pervasive challenge, cutting across income, cultural, and social divisions. Domestic violence is the most prevalent form of violence against women, although sexual harassment, non-partner sexual assault, and trafficking are also serious concerns. According to the UN Women 2022 Gender Snapshot for Armenia, domestic violence affects a significant share of women, with high rates of underreporting due to stigma, fear of retaliation, economic dependence, and lack of trust in authorities.

The Law on Prevention of Domestic Violence, Protection of Victims and Restoration of Justice (adopted in 2017) provides a legal framework for addressing domestic violence, mandating protective orders and establishing state obligations for victim support. Specialized police units, such as the Domestic Violence Division of the Armenian Police, have been operationalized to handle complaints and investigations.

Progress has been made in raising public awareness, and the number of reported domestic violence cases has increased steadily in recent years. However, challenges persist. Customary mediation practices, patriarchal social norms, and inadequate survivor protection mechanisms continue to limit women's access to justice. In many communities, survivors still prefer informal resolution rather than formal legal channels, due to societal pressures.

In the context of this Project, these broader patterns of gender-based violence and unequal power relations translate into specific SEAH risk factors. Project activities involve interactions between technical staff, contractors, local authorities, and community members during consultations, trainings, and awareness-raising on early warning systems. In rural and mountainous communities with entrenched patriarchal norms, women and girls – especially those from low-income or female-headed households, as well as women and girls with disabilities and elderly women – may be at heightened risk of sexual harassment or abuse of authority in such settings. Young women students and early-career professionals participating in project-supported academic, internship, or research activities may also be exposed to harassment in male-dominated institutional environments.

At the same time, SEAH can also affect men and boys, particularly younger participants and staff in subordinate positions, whose experiences are often underreported due to stigma and social expectations around masculinity. In remote locations with limited services, survivors of any gender face additional barriers to reporting, confidentiality, and accessing support. While the Project's SEAH risk level is assessed as low, these contextual and project-linked factors justify a proactive, survivor-centred prevention and response approach, reflected in the ESAP, SEP, and Gender Action Plan.

Armenia signed the Council of Europe Convention on Preventing and Combating Violence against Women and Domestic Violence in 2018 but has not yet ratified it. Ongoing dialogue among public institutions, civil society organisations, and community actors reflects continued engagement toward strengthening protections against gender-based violence. In this context, local governance structures and community leadership remain essential partners in advancing women's rights and gender equality (UN Women, 2022).

4. Gender-related political, legal and institutional environment in Armenia

4.1 Policy environment and legal framework

The Government of Armenia remains firmly committed to promoting gender equality, as enshrined in the Constitution of Armenia, which guarantees equal rights and prohibits discrimination based on sex (Article 14.1). Article 32 affirms equality between spouses in marriage, divorce, and child-rearing. This constitutional foundation is reflected in a wide range of national strategies and legal instruments that guide the country's gender equality agenda.

Gender equality is further recognized as a strategic priority in the Gender Policy Strategic Action Plan (2021–2025), which outlines objectives such as:

- Strengthening gender mainstreaming systems across governance;
- Promoting gender-responsive legal reforms and national/local policymaking;
- Conducting public campaigns to combat gender stereotypes;
- Economic empowerment through women's entrepreneurship and employment programs;
- Increasing women's participation in civil service and leadership roles;
- Improving reproductive health services access;
- Zero-tolerance enforcement toward domestic and gender-based violence.[2]

Complementing this, the National Action Plan on Gender Equality (NAP-GE) 2021–2025 provides a sector-specific implementation framework that prioritizes women's political participation, economic empowerment, prevention of gender-based violence (GBV), and integration of gender perspectives into climate action, disaster risk reduction, and social protection policies.

Internationally, Armenia ratified the Convention on the Elimination of All Forms of Discrimination Against Women (CEDAW) and submitted its Ninth Periodic Report in 2022, reaffirming ongoing efforts to harmonize national legislation with the Convention's requirements. As mentioned above, Armenia also continues dialogue around the ratification of the Council of Europe Convention on Preventing and Combating Violence against Women and Domestic Violence, signed in 2018, aiming to align national frameworks with international GBV prevention standards. The country is also implementing its Second National Action Plan for UN Security Council Resolution 1325 (2022–2024), which advances women's participation in peacebuilding, conflict prevention, and security governance.

Armenia is committed to implementing the 2030 Agenda for Sustainable Development, particularly SDG 5 on Gender Equality. In 2022, Armenia released an updated national SDG Progress Report, identifying gender-disaggregated indicators and aligning them with national policy frameworks.

In the context of climate action and disaster risk reduction, Armenia's Updated Nationally Determined Contribution (NDC) 2021–2030 explicitly integrates gender-responsive approaches, recognizing the differentiated impacts of climate change on women and men and the importance of women's leadership in resilience-building. Likewise, the country's obligations under the Sendai Framework for Disaster Risk Reduction (2015–2030) reinforce the need to incorporate gender considerations into vulnerability assessments, early warning systems, and emergency preparedness planning.

While these policies collectively demonstrate a strong national commitment to gender equality, the degree of practical implementation varies across sectors and levels of governance. National gender mechanisms—such as the Secretary of State for Equality and Inclusion and Gender Working Groups (GWGs) operating within line ministries—provide structured avenues for mainstreaming gender priorities. However, these mechanisms frequently operate with limited dedicated resources, varying levels of technical capacity, and uneven enforcement of gender-responsive practices at the subnational level. Budget allocations for gender mainstreaming remain modest, and monitoring systems for tracking progress on gender-related indicators are still developing.

Despite these constraints, progress is steadily advancing. Collaboration with civil society organizations, development partners, women's rights groups, and local authorities continues to strengthen the implementation of national strategies, helping translate policy commitments into tangible improvements in gender equality and the participation of women and vulnerable groups in climate resilience, early warning, and disaster management initiatives.

4.2 Institutions

The Secretary of State for Equality and Inclusion (SEII) is the principal national mechanism for advancing gender equality in Armenia. Formerly, it was known as the Secretary of State for the Support and Socio-Economic Promotion of Women (SEM) and previously as the Secretary of State for the Promotion of Equality (SEPI). SEPI was formally established in 2008 as a legal agency within the central government, with the mandate to strengthen women's rights and promote gender equality.

The SEII actively coordinates with Gender Working Groups (GWGs) to mainstream gender priorities across government sectors.[3] GWGs were initiated in 2011 as mechanisms for intersectoral cooperation, designed to integrate gender concerns into national and municipal plans, budgets, and policies.[3]

According to the 2022 UNDP Gender Assessment on Armenia, while SEII and GWGs demonstrate foundational competencies in addressing gender issues, there remain significant technical gaps in the following areas:

- Limited technical capacity to conduct gender mainstreaming, particularly in applying gender analysis tools alongside climate vulnerability risk assessments and in supporting policymaking for adaptation and disaster risk reduction initiatives;
- Insufficient institutional influence to ensure their consultation during project design, planning, and implementation phases.

Moreover, the adoption of the Law on Local Self-Government (amended 2022) has enhanced the decision-making authority of municipal and community (marz and hamaynk) governments. This decentralization process positions local authorities as key actors in the implementation of gender-responsive and community-driven programs, particularly those addressing climate resilience, disaster risk reduction, and women's empowerment at the grassroots level.

4.3 Civil society organisations

In Armenia, civil society organizations (CSOs) play a central role in advancing gender equality, providing critical services to women and marginalized groups, and advocating for systemic reform. These organizations work closely with local communities, state institutions, and international partners to strengthen legal protection, economic opportunities, and social inclusion for women and girls across the country.

Women's Support Center (WSC)

The Women's Support Center is one of Armenia's leading NGOs focused on preventing gender-based violence and supporting survivors through comprehensive services. The organization operates shelters, provides free legal aid, and offers psychosocial support to women and children experiencing domestic violence. It also works closely with law enforcement, judiciary actors, and healthcare professionals to build institutional capacity and improve referral systems. WSC has been a vocal advocate for the implementation of the 2018 Law on Domestic Violence and has led public awareness campaigns on violence prevention.

Society Without Violence (SWV)

Founded in 2001, Society Without Violence promotes gender equality through education, policy advocacy, and youth engagement. SWV is particularly recognized for its work in gender-sensitive education, having developed school curricula and teacher training modules that challenge stereotypes and promote gender justice. The organization also monitors women's political participation and advocates for gender-sensitive electoral reform, with a focus on increasing women's representation at the local and national levels.

Women's Resource Center (WRC)

The Women's Resource Center is one of the oldest feminist organizations in Armenia, established in 2003. Its work spans legal empowerment, sexual and reproductive rights, economic justice, and feminist advocacy.[3] WRC provides legal counseling, runs public campaigns, and facilitates feminist education workshops for youth and activists. It also manages rural women's collectives in Gegharkunik and Shirak regions, offering skills training and income-generation support.

Armenian Association of Women with University Education (AAWUE)

AAWUE supports women's professional development and leadership, particularly in science, education, and public service. The association implements mentorship programs, STEM initiatives, and policy dialogues to address the underrepresentation of women in decision-making roles. In recent years, AAWUE has also contributed to gender mainstreaming in climate resilience planning, ensuring that women's perspectives are included in national adaptation strategies.

Coalition to Stop Violence Against Women

Established in 2010, this national coalition unites more than 10 women's organizations across Armenia working to end gender-based violence. It coordinates advocacy, legal reform efforts, and service delivery, including support for shelters, hotline services, and legal representation. The Coalition monitors state compliance with the Istanbul Convention and engages in civil society reporting to CEDAW. Its member organizations are active in rural and urban areas alike, ensuring wide geographic coverage and grassroots engagement.

5. Gender roles, gaps and challenges in the GFCS priority sectors

5.1 Agriculture and food security

Agriculture remains a critical livelihood source in Armenia, particularly in rural and mountainous regions. Women are significantly involved in small-scale farming, especially in household-level food production, livestock care, and seasonal labor. According to the Statistical Committee of Armenia (2023), approximately 52% of women employed in rural areas are engaged in agricultural work, mostly unpaid or informal.

Despite their essential role, women farmers in Armenia face persistent barriers to productivity, including limited access to land ownership, irrigation systems, modern farming tools, and agricultural extension services. Land fragmentation and insecure tenure also disproportionately affect women-headed households. Moreover, women's lower representation in agricultural cooperatives and marketing groups reduces their ability to benefit from subsidies and training programs.

These constraints contribute to lower agricultural yields among female farmers, which in turn impact household food security — particularly in regions prone to seasonal droughts or land degradation. Women are more vulnerable to climate-induced shocks due to their reliance on subsistence agriculture and limited access to climate-smart technologies.

5.2 Disaster risk reduction

Armenia is highly vulnerable to natural hazards, including earthquakes, landslides, floods, and climate-related events such as droughts and extreme weather. The Ministry of Emergency Situations (MES) is the central authority responsible for disaster risk management (DRM) and coordinates national-level response and preparedness efforts.

At the local level, municipal emergency commissions are tasked with implementing community-based disaster response plans. However, the incorporation of gender-sensitive risk assessments remains inconsistent.

A 2023 UNDP study found that women are underrepresented in local DRM planning bodies and face limited access to information and resources during emergencies.

Gender mainstreaming is being progressively integrated into national DRM strategies. Armenia's updated Disaster Risk Reduction Strategy 2023–2030 includes provisions for gender-sensitive vulnerability assessments, community engagement, and inclusive early warning systems. However, institutional capacity and budget allocations for gender integration at sub-national levels remain limited.

5.3 Energy

Armenia’s energy system relies heavily on imported fossil fuels, nuclear energy, and a growing share of renewable sources, including hydropower and solar. Despite nationwide electrification, rural and border communities continue to experience irregular or unaffordable access to reliable energy services.

Women are disproportionately affected by energy poverty due to their roles in household care, food preparation, and heating management. In some regions, fuelwood remains a primary source for cooking and heating, leading to negative health outcomes from indoor air pollution. The 2022 Energy Poverty Assessment by the World Bank noted that women-headed households are more likely to reduce energy usage in winter, increasing health and safety risks.

Gender-equitable energy access is a growing priority in Armenia’s green transition policies. The National Energy Efficiency Action Plan (NEEAP) includes gender-disaggregated indicators and promotes women's participation in energy cooperatives and rural solar initiatives. However, more targeted programs are needed to reduce the energy burden on low-income women and promote gender-responsive energy infrastructure.

5.4 Health

(Refer to Section 3.4 for detailed analysis.)

5.5 Water and sanitation

Access to clean water and adequate sanitation remains a challenge in some rural areas of Armenia, especially in high-altitude and border regions. While national infrastructure coverage has expanded, disparities persist. As of 2023, 87% of urban households have access to safely managed drinking water, compared to just 63% in rural areas.

Women and girls bear the primary responsibility for water collection and household hygiene, with time burdens especially high in villages lacking piped supply. In remote communities, water collection can exceed one hour daily, reducing time for education or income-generating activities.

Gender is being increasingly considered in Armenia's WASH (Water, Sanitation, and Hygiene) programming, particularly through community-based management models. The EU-supported "Water-Wise Women" initiative (2022–2024) has shown that women's participation in water-user associations leads to more equitable and sustainable resource use. Nonetheless, structural challenges—such as gender norms, low awareness, and limited public investment in household sanitation—continue to affect women's health and dignity.

6. Gender and climate change in Armenia

6.1 Gender issues related to climate change impacts and risks

In Armenia, climate change is increasing the frequency and intensity of hazards such as droughts, floods, landslides, and extreme temperature variations. These hazards do not affect all groups equally. Due to persistent gender inequalities, women and girls—particularly in rural and mountainous areas—face heightened vulnerabilities to climate risks.

Floods

Armenia has experienced an uptick in localized flash floods, particularly in Syunik, Lori, and Tavush provinces, exacerbated by deforestation and poor land management. During such events, women—especially elderly women and mothers with young children—are disproportionately at risk. This is due in part to mobility restrictions, care responsibilities, and limited access to emergency communication tools. A 2023 Oxfam Armenia study reported that only 35% of women in high-risk areas had access to timely evacuation information or early warnings during the 2022 floods. Moreover, as primary caretakers of household goods and food supplies, women often suffer higher asset losses during sudden climate-related disasters.

Drought

Droughts have become more severe and prolonged in Armenia's Ararat Valley and Vayots Dzor regions, threatening agriculture and water security. Women farmers, who are overrepresented in subsistence farming and informal labor, are particularly vulnerable. A UNDP 2023 climate vulnerability study found that 72% of women surveyed had to reduce irrigation or abandon parts of their crops during the 2022 drought, compared to 54% of men. Women's disproportionate domestic and caregiving roles, coupled with limited access to water rights and irrigation infrastructure, deepen their exposure to drought-related livelihood losses.

Landslides

Landslides, often triggered by heavy rain or seismic activity, are common in Armenia's mountainous areas. Women, children, and persons with disabilities—who are more likely to be at home during the day—are especially vulnerable to these sudden-onset hazards.[7] Despite the growing risk, public education campaigns on landslide preparedness rarely include gender-sensitive risk communication or evacuation planning.
Gender, age, disability, and income status all shape exposure, coping capacity, and adaptive responses to these hazards. Targeted education and inclusive disaster risk communication strategies remain limited across Armenia.

6.2 Gender issues in accessing climate information and early warning services

Access to climate information and early warning services in Armenia is shaped by gender, geography, socioeconomic status, and institutional reach. Structural inequalities restrict women's ability to obtain, interpret, and act on life-saving climate information.

Structural barriers to access

Women in rural Armenia have limited access to early warning systems due to gaps in mobile connectivity, unreliable local radio broadcasts, and lack of digital literacy. Social norms often assign men as the primary recipients of public information, meaning women are reliant on secondary transmission—usually through family members or local leaders. This was documented during the 2022 flood season, where early warning messages did not reach a significant proportion of female-headed households.

Asset ownership and decision-making
Low rates of land and asset ownership among women reduce their ability to make climate adaptation decisions independently. Traditional norms often exclude women from village-level decision-making regarding land use, irrigation, and resource planning, limiting their capacity to proactively respond to warnings.

Geographic and social disparities
Gender disparities intersect with location and income. Remote, high-altitude villages in Aragatsotn and Gegharkunik regions lack sufficient meteorological coverage and communication infrastructure, cutting off many households from early warning systems. Women with disabilities and elderly women face additional physical and informational access barriers.

Gender-differentiated information needs
Women and men prioritize different aspects of climate information based on their gender roles. Women are more likely to need early warning messages related to water availability, food security, health impacts, and school closures. Men often prioritize infrastructure damage or impacts on livestock. Yet most early warning products in Armenia are not customized to reflect these different user needs.

Communication challenges
Climate and warning messages are often presented in overly technical formats and are rarely translated into community-accessible Armenian or minority languages (e.g. Yezidi Kurdish). Women with lower literacy levels or limited formal education are particularly disadvantaged. Without inclusive communication design, many are unable to take timely or informed action.

These access barriers are particularly acute for traditionally marginalised groups. Ethnic minorities such as Yezidi, Kurdish, and Assyrian populations often rely on informal information networks and may have limited access to Armenian-language technical forecasts, requiring multilingual and culturally tailored risk communication. Youth, although digitally connected, frequently lack awareness of official early warning channels or trust in institutional messaging, reducing their engagement in preparedness behaviors. Persons with disabilities, including those with hearing or visual impairments, face additional communication challenges due to the limited availability of accessible formats such as audio descriptions, tactile prompts, or sign-language-supported messaging. The Project therefore integrates differentiated communication pathways and inclusive dissemination practices responsive to these diverse needs.

The Accredited Entity will ensure that the project's grievance redress mechanism (GRM) is fully accessible, safe, and responsive to the needs of women, girls, persons with disabilities, ethnic minorities, and other vulnerable groups. In line with the Gender Action Plan and the Stakeholder Engagement Plan, the GRM will offer multiple confidential entry points, including written, verbal, digital, and community-based channels, to accommodate different communication needs and literacy levels. Anonymous submissions will be permitted, and all grievances particularly those related to discrimination, exclusion, gender-based concerns, or harmful community dynamics will be managed by trained PMU staff, including the Compliance Officer, using survivor-centred and gender-sensitive handling procedures.

Information about the GRM will be disseminated through tailored outreach to women's groups, community leaders, and local CSOs, ensuring that women and marginalised populations understand how to safely access the mechanism. Referral pathways will be established with relevant national institutions and NGOs to ensure that individuals raising sensitive issues such as GBV-related concerns encountered during project

activities receive appropriate support. These provisions ensure that all participants, including women and vulnerable groups, can raise concerns safely and without fear of reprisal throughout the project lifecycle.

7. Recommendations for a gender transformative approach

7.1 Mainstream gender in climate information, early warnings, and disaster risk management

Effective climate information and disaster risk reduction (DRR) in Armenia must be built on an understanding that gender is not peripheral—it is central to resilience, risk, and response. Gender norms, roles, and inequalities interact with environmental shocks and climate variability in ways that can marginalize women and gender minorities or reinforce systemic exclusion.

Project interventions will adopt a gender-transformative approach, challenging gendered power dynamics and promoting inclusive, resilient communities. This involves not only ensuring women are represented, but also applying an intersectional lens—considering how gender interacts with other factors such as age, disability, rurality, income, and ethnic identity (e.g., Yezidi, Assyrian, Kurdish populations).

Throughout planning, design, implementation, and evaluation, the Project will ensure that consultations and co-design processes actively involve underrepresented groups. This proactive engagement helps avoid a "one-size-fits-all" approach and ensures the proposed actions address Armenia's diverse vulnerabilities and capacities.

7.2 Ensure meaningful participation of women

The Project will prioritize meaningful participation of women and gender-diverse individuals at all levels. Meaningful participation implies not only physical presence, but actual agency and influence in decision-making.

To achieve this:

- Capacity building will be central, with flexible training schedules and locations that consider caregiving responsibilities and transport limitations.
- Women-led community groups will be integrated as key stakeholders in DRR planning and local climate service delivery.
- Gender quotas or targets may be considered in relevant bodies (e.g., Community Emergency Preparedness Committees).
- Sector-wide gender mainstreaming, such as in Armenia's National Framework for Climate Services (under development), will be supported to scale impacts beyond local pilot sites.

Importantly, participation must also include men and community gatekeepers in transformative dialogues on gender and climate. Engaging traditional leaders, male farmers, and faith groups helps shift entrenched power norms and builds broader community support for gender equality in resilience planning.

Ensuring women's participation in decision-making within Armenia's early warning system is embedded across project governance and technical structures. Women will be systematically included in the design, review, and operational oversight of EWS components through representation in the Project Steering Committee, the National Framework for Climate Services (NFCS) technical working groups, and Armhydromet-led advisory and consultation platforms. The Accredited Entity will ensure that selection processes for these bodies apply gender-inclusive criteria and encourage the participation of women from national ministries, municipal authorities, academia, civil society, and community organisations.

The project will also strengthen women's roles in community-level decision-making related to preparedness and response by integrating gender-responsive facilitation into the Stakeholder Engagement Plan (SEP) and ensuring targeted outreach to women farmers, women-headed households, and women's civil society organisations in hazard-prone areas. These measures ensure that women's perspectives inform forecasting priorities, risk communication approaches, and preparedness protocols, and that women contribute meaningfully to the governance and continuous improvement of Armenia's Multi-Hazard Early Warning System.

7.3 Consider gender norms, behavior patterns, and information preferences in dissemination and communication

Dissemination of climate information and early warnings in Armenia must account for how women and men differently access, interpret, and act on information. Risk communication that assumes equal access to phones, media, or public space excludes those most vulnerable.

Actions will include:

- Translating warnings and forecasts into Armenian and minority languages (e.g., Yezidi Kurdish, Russian) using plain, non-technical language;
- Developing gender-responsive communication strategies that include both formal and informal channels (schools, health posts, women's centres, mobile messengers);
- Training women and men on how to interpret and respond to warnings, including through scenario-based simulations;
- Using trusted community actors (e.g., village heads, nurses, youth volunteers) to relay early warnings;
- Integrating traditional knowledge and seasonal indicators shared by local women and elderly community members into community-based early warning systems (CBEWS).

7.4 Tailor preparedness and response actions to the differential needs and capacities of vulnerable groups

Women in Armenia are not passive victims of climate risks—they are knowledge holders, caregivers, economic contributors, and often first responders in their households and communities. The Project will leverage this capacity.

In addition to gender-differentiated vulnerabilities, preparedness and response actions must account for the needs of ethnic minorities, youth, and other marginalised populations living in high-risk areas. Consultations revealed that Yezidi and Kurdish-speaking communities often depend on oral communication and community leaders, highlighting the need for multilingual alerts and culturally appropriate outreach. Young people, despite their higher digital literacy, may be disconnected from formal preparedness structures and require targeted engagement through schools, youth clubs, and mobile platforms. Persons with disabilities and elderly individuals require adaptable alert formats, assisted evacuation planning, and strengthened community support networks. Integrating these considerations into preparedness and response planning is essential for ensuring equitable access to early warnings and improving climate resilience across Armenia's diverse population.

Actions include:

- Developing tailored public awareness campaigns that reflect local gender realities and include visual, auditory, and tactile communication methods (important for people with disabilities);
- Using gender-disaggregated data in risk maps and preparedness plans to better identify who is exposed to which risks;

- Capturing lessons learned from gendered disaster experiences (e.g., 2022 Lori landslide response) and integrating them into new training materials;
- Partnering with women's groups (such as the Women's Resource Centers supported by UNDP and UN Women) to co-create training and support networks;
- Designing community-based early warning systems that complement automated national alerts;
- Ensuring equitable access to Forecast-based Financing (FbF) schemes and that criteria for assistance (e.g., cash transfers or food aid) do not inadvertently exclude women.

7.5 Promote equitable power, decision-making, and access to resources

Resilience in Armenia depends on equitable participation and control over resources. Evidence shows that when women are empowered to lead in DRR, outcomes improve for entire communities.

The Project will promote:

- Human capital: Trainings in leadership, and digital tools to increase women's participation in skilled employment and governance.
- Social capital: Strengthening women's networks and promoting equal participation in community-based organisations and climate councils.
- Physical capital: Ensuring that women have equal access to climate services.
- Financial capital: Facilitating access to climate-index insurance for rural women farmers and entrepreneurs.

The capital areas identified above are addressed through specific activities in the Gender Action Plan that fall fully within the scope of this Category C early-warning and institutional-strengthening project:

- Human capital is supported through GAP activities promoting women's participation in technical and leadership trainings, including digital skills, MEAL tools, forecasting technologies, and preparedness-related capacity building.
- Social capital is strengthened through GAP actions that ensure inclusive stakeholder engagement, gender-balanced facilitation, and women's meaningful participation in climate councils, coordination bodies, and community preparedness structures.
- Physical capital is addressed indirectly through GAP measures that ensure women's equal access to climate services, including gender-responsive communication tools, tailored dissemination approaches, and accessible early-warning channels.
- Financial capital is supported through GAP activities that disseminate information on climate-index insurance and anticipatory action financing mechanisms developed under Component 3, enabling rural women farmers and entrepreneurs to better understand and engage with such opportunities.

These GAP activities ensure that the capital constraints identified in the gender analysis are mitigated through the Project's training, communication, and inclusion-focused interventions, without extending the Project scope into areas such as land reform, infrastructure provision, or financial service delivery.

7.6 Minimize the risk of gender-based violence (GBV)

Emergencies and displacement—such as during floods or drought-induced migration—can significantly increase the risk of GBV in Armenia. To address this, the Project will embed GBV risk mitigation throughout its early warning and DRR efforts.

In line with best practices:

1. **Risk Knowledge:** Include GBV-related vulnerabilities and gender-specific exposure in hazard mapping and risk assessments.

2. **Monitoring and warning service:** Analyse gendered access to early warning data and how surveillance systems can include community knowledge of rising tensions or GBV incidents.
3. **Dissemination and communication:** Tailor communication tools to avoid triggering anxiety or confusion and ensure private and safe access to alerts.
4. **Preparedness and response capabilities:** Partner with local GBV service providers and police units to integrate protection protocols into evacuation, shelter management, and relief delivery. Prioritize women's participation in the design of safe spaces and complaint mechanisms.

Engaging the Ministry of labor and social affairs, the Human rights defender's Office, and women's CSOs will be key in aligning the Project's actions with Armenia's National Strategy for Preventing GBV (2023–2027).

In the specific context of this Project, minimizing GBV also includes preventing and responding to SEAH in all project-related settings involving staff, contractors, partners, and community members, with particular attention to the heightened risks faced by women, girls, elderly women, and persons with disabilities, while acknowledging that men and boys can also be affected.

SEAH-related vulnerabilities differ across genders and age groups. Women and girls, especially those from rural, low-income, or female-headed households, face heightened SEAH risks in project settings due to unequal power relations and limited access to protection services. Elderly women and women and girls with disabilities experience additional barriers to reporting and support. Men and boys, particularly youth and junior staff, may also experience SEAH but remain underrepresented in reporting due to stigma. These differentiated risks inform all actions outlined in the Gender Action Plan.

8. Gender Action Plan

Objective: Operationalise gender equality and social inclusion in climate information, early warnings, and disaster risk management (DRM) in Armenia—maximizing co-benefits for women, men, and marginalised groups.

Integration of Gender Expertise in Project Management and Decision-Making: To ensure that gender considerations are consistently embedded across all stages of project implementation, the Project provides for a dedicated full-time Gender Expert within the PMU. This position was incorporated into the implementation arrangements to strengthen the project's ability to apply gender-responsive approaches on a day-to-day basis. The Gender Expert will participate in internal planning and decision-making processes, advise technical teams and implementing partners, and guide the integration of gender considerations into activity design, stakeholder engagement, communication, monitoring, and reporting.

The cost of the Gender Expert is reflected in the Gender Action Plan budget, ensuring availability of the resources required to support implementation of GAP actions, oversee gender-responsive results monitoring, and maintain continuous coordination with national institutions and local partners. Embedding gender expertise directly within the PMU reinforces the project's governance structure and ensures that the pursuit of gender equality is effectively mainstreamed throughout all components of the early warning system intervention.

Baseline and Target Methodology: Baselines for women's participation in hydrometeorological, EWS, and DRM sectors in Armenia are currently low due to structural gender gaps. Where gender-disaggregated baselines are not available, the Project will establish them in Year 1 through a combination of: (i) PMU-led institutional assessment of Armhydromet, Ministry of Internal Affairs and Emergency Response Center; (ii) gender-disaggregated participant registration forms; and (iii) consultations with women's organisations and local authorities in target marzes.

Justification for Targets Below 50%: Participation targets in some technical areas (e.g., radar maintenance, modelling, emergency preparedness leadership) are set below 50% due to existing national workforce realities, where women currently constitute 15–30% of staff in hydrometeorology, emergency services, and technical DRM departments. The project's targets nevertheless represent a significant and realistic upward shift consistent with labor-market capacities and aligned with GCF Gender Policy expectations for transformative yet feasible improvements.

Outcome 1: Upgraded hydro-meteorological observation network, modelling, and forecasting capacities						
Outputs	**Gender action**	**Baseline**	**Indicator**	**Timeline**	**Responsible entity**	**Cost Estimate**
1.1 More accurate, reliable, and timely hydro-meteorological forecasts are produced and used nationally to anticipate climate-related hazards	1. Recruit and train at least 30% women technicians for operation and maintenance of AWS (Automatic Weather Stations), radar, and hydrological stations. 2. Set gender-responsive recruitment guidelines.	Women represent approx. 18–22% of Armhydromet's technical workforce.	% of women trained in monitoring and maintenance roles	Year 1–3	Armhydromet, Gender expert, PMU	USD 38,000 Breakdown: Training of 30% female technicians (travel, per diem, materials): USD 20,000 Development of gender-responsive recruitment guidelines: USD 8,000 Gender Expert time for review and monitoring: USD 10,000 Budget linkage: Output 1 – Capacity building and training line + PMU Gender Expert

1.2 Integrated data, modelling, and NWP systems operational for short-range and impact-based forecasting	1. Integrate gender modules into hazard modelling training. 2. Ensure at least 40% female participation in all data system trainings.	Female participation in hydrology/meteorology technical trainings estimated at 20–25%.	% of female participation in technical hazard modelling trainings	Year 2–4	Armhydromet, Gender expert, PMU	USD 32,000 Breakdown: Integrating gender modules into hazard modelling curricula: USD 10,000 Ensuring 40% female participation (outreach, travel support): USD 15,000 Gender Expert support for curriculum alignment: USD 7,000 Budget linkage: Output 1 – Technical training workshops
1.3 Quality management and operational procedures institutionalized in Armhydromet for	1. Ensure equal opportunities for women to receive WMO certification training (Minimum 25% of trainees certified are women).	<15% of staff holding WMO certifications are women.	% of women certified under WMO standards	Year 2–5	Armhydromet, Gender expert, PMU	USD 28,000 Breakdown: Supporting participation of women in certification

WMO-certified climate services	2. Appoint gender focal points within QA/QC units.					courses: USD 15,000 Establishing gender focal points within QA/QC Units: USD 5,000 Gender Expert oversight and coaching: USD 8,000 Budget linkage: Output 1 – Quality management / institutional strengthening
1.4 National Framework for Climate Services (NFCS) operationalized and embedded in policy and sectoral planning	1. Ensure women's participation in NFCS consultation workshops (minimum 40%). 2. Integrate a gender strategy into the NFCS Strategic Plan. 3. Establish mechanisms to ensure women's representation in NFCS technical working groups and community feedback structures (minimum 40%).	Women's representation in national climate-service governance platforms is approx. 20–30%, varying by institution.	Gender Strategy annexed to NFCS. % of women attending NFCS fora % women in NFCS technical groups	Year 1–5	Armhydromet, Gender expert, PMU	USD 45,000 Breakdown: Gender-responsive NFCS consultations (travel/per diem for women participants): USD 20,000 Development of NFCS Gender

						Strategy annex: USD 15,000 Ensuring women's representation in technical groups (40% target): USD 10,000 Budget linkage: Output 1 – Stakeholder engagement + PMU gender integration
Outcome 2: Strengthened early warning dissemination and communication						
Activity	**Gender Action**		**Indicator**	**Timeline**	**Responsible entities**	
2.1 Inclusive, multi-channel early warning dissemination system operational and accessible to diverse users	1. Develop gender-sensitive warning messages (audio/visual, multilingual; increase to 60% in target communities). 2. Pilot at least 5 community-based dissemination systems prioritizing women, elderly, and disabled users.	No gender-responsive risk communication protocols currently exist. Consultations indicate <35% of rural women receive timely warnings.	Number of gender-adapted communication protocols. % of women reporting timely access to warnings	Year 2–4	Ministry of Internal Affairs, Armhydromet, NGOs, Gender expert	USD 60,000 Breakdown: Designing gender-sensitive warning messages (audio/visual, multilingual): USD 25,000

						Piloting 5 community-based dissemination systems: USD 30,000 Gender Expert review + baseline/target monitoring: USD 5,000 Budget linkage: Output 2 – Risk communication systems + communications budget
2.2 Preparedness and response capabilities of national and local authorities strengthened for coordinated early action	1. Conduct gender-responsive simulation exercises (at least 4 gender-sensitive drills conducted). 2. Train at least 50% women leaders in emergency preparedness (community leaders, first responders). 3. Integrate GBV-risk considerations into emergency preparedness and simulation exercises;	<20% of community preparedness leadership roles are held by women.	Number of women trained Number of gender-sensitive drills conducted GBV-sensitive guidance developed % of women reporting feeling safer participating in drills	Year 2–5	Emergency Response Centre, PMU, Gender expert, local NGOs	USD 72,000 Breakdown: 4 gender-sensitive simulation drills (multi-marz): USD 28,000 Training 50% women leaders (logistics, venue, travel): USD 20,000

	develop safe, confidential referral and reporting guidance for women and girls during climate-related emergencies.					Developing GBV/SEAH-safe preparedness guidance: USD 12,000 Gender Expert coordination & follow-up: USD 12,000 Budget linkage: Output 2 – Capacity building for preparedness + PMU gender/SEAH safeguard
Outcome 3: Institutionalization of Anticipatory Action and Innovation to Enable Future Resilience Financing						
Output	**Gender Action**		**Indicator**	**Timeline**	**Responsible Entities**	
3.1 Anticipatory action protocols and public–private collaboration frameworks established	1. Ensure gender analysis informs the risk assessment for anticipatory action and the development of Early action protocols (EAPs, at least 3). 2. Prioritize actions benefiting women	No gender-responsive EAPs exist; no sex-disaggregated usage data.	Number of gender-responsive EAPs developed. % of early actions benefiting women	Year 3–5	PMU, Financial Institutions, Gender expert, NGOs	USD 55,000 Breakdown: Integrating gender analysis into AA risk assessment: USD 20,000

	farmers, caregivers, and vulnerable households (50%). 3. Ensure women's equal access to anticipatory action benefits, risk financing products, and decision-making processes within PPP mechanisms (40% of beneficiaries of AA/PPP products are women).		% of women benefiting from AA/PPP outputs			Development of 3 gender-responsive Early Action Protocols: USD 25,000 Gender Expert supervision: USD 10,000 Budget linkage: Output 3 – AA/PPP design & institutional capacity
3.2 Monitoring, evaluation, accountability, and learning (MEAL) systems operational to support adaptive management	1. Document gender lessons from the project implementation (minimum 3 gender case studies produced). 2. Ensure women's participation in training (minimum 40%).	No gender-differentiated lessons or case studies exist.	Number of gender case studies developed and disseminated % of women attending the trainings	Year 4–5	PMU, Gender Expert	USD 22,000 Breakdown: 3 gender case studies (documentation, field visits): USD 12,000 Ensuring 40% women in MEAL trainings (travel support): USD 6,000 Gender Expert follow-up: USD 4,000

						Budget linkage: Output 3 – MEAL system strengthening
3.3 Innovation, research partnerships, and regional knowledge exchange strengthened	1. Encourage women to proactively participate in the multi-stakeholder innovation lab-related activities (minimum 40%). 2. Present gender-sensitive Anticipatory Action and resilience financing-related lessons at regional/ triangular exchange events (at least **2** gender-sensitive lessons presented internationally).	Women's participation in climate innovation spaces currently <25%.	% of women participating in the multi-stakeholder innovation lab-related activities Number of gender- sensitive Anticipatory Action and resilience financing-related lessons presented at regional/ triangular exchange events	Year 4–5	PMU, Gender Expert	USD 30,000 Breakdown: Encouraging 40% women participation in innovation events: USD 15,000 Presenting 2 gender-sensitive lessons internationally: USD 10,000 Gender Expert support: USD 5,000 Budget linkage: Output 3 – Innovation Lab & knowledge products
Mandatory SEAH training for all project personnel	Mandatory SEAH training for all PMU staff, contractors, consultants, trainers, and field personnel, covering	No SEAH training delivered under the Project; no common understanding of SEAH responsibilities.	% of project personnel trained (target: 100%)	Year 1; refresher annually	PMU Gender Officer; Armhydromet Gender Focal Point	Included in USD 105,000 consolidated SEAH budget

	SEAH definitions, expected behavior, survivor-centered response, and reporting.		Training materials and attendance sheets archived			
Mandatory SEAH-sensitive Code of Conduct	Mandatory signing of SEAH-sensitive Code of Conduct by all project staff, contractors, and consultants as condition for mobilization.	No SEAH-specific Code of Conduct in place for Project personnel.	% of project personnel with signed Code of Conduct (target: 100%)	Prior to mobilization for all staff; ongoing for new personnel	EPIU Procurement Specialist; PMU Manager	Included in USD 105,000 consolidated SEAH budget
SEAH-integrated GRM with confidential and anonymous reporting	Integrate confidential SEAH reporting channels and survivor-centered response procedures into the Project GRM; maintain referral pathways to national GBV/SEAH support services.	GRM exists but lacks SEAH-specific handling, confidentiality protocol, and referral pathways.	GRM updated to include SEAH protocol # of SEAH complaints addressed according to protocol	Year 1; maintained throughout project	PMU Gender Officer; EPIU GRM Focal Point	Included in USD 105,000 consolidated SEAH budget
Safe and gender-responsive stakeholder engagement	Ensure safe, accessible, well-lit venues; gender-balanced facilitation teams; SEAH messages and reporting channels communicated at all consultations/trainings.	Engagement activities conducted without SEAH safeguards or gender-balanced facilitation.	% of engagement events with gender-balanced facilitation SEAH reporting information disseminated at all events	Throughout implementation	PMU Gender Officer; Armhydromet Communications Unit; EPIU Safeguards Officer	Included in USD 105,000 consolidated SEAH budget
SEAH awareness-raising at community and institutional level	Integrate SEAH awareness and reporting information into project communication products	No SEAH messaging integrated into project communication materials.	# of communication products	Throughout implementation	Armhydromet Communications Unit; PMU Gender Officer	Included in USD 105,000 consolidated SEAH budget

	(posters, leaflets, scripts, digital content).		including SEAH messages Visibility of SEAH information at all stakeholder events			

8.1 SEAH Prevention and Response Measures

The Gender Assessment has identified that project activities involving community engagement, technical trainings, and interaction between staff, contractors, and beneficiaries may present low-level SEAH risks, particularly for women, girls, elderly women, and persons with disabilities. Risks may also arise among project personnel in institutional settings. These risks remain low under the SAP classification but justify inclusion of dedicated prevention and response measures within the Gender Action Plan. The actions that follow operationalize these SEAH risk mitigation commitments.

In line with the GCF Environmental and Social Standard 4 (ESS4: Community Health, Safety and Security), all gender and SEAH-related risk mitigation measures under this GAAP are recognized as part of the Project's obligations to ensure safe, respectful, and non-discriminatory engagement with communities. ESS4 is therefore applicable to all activities involving community interaction, consultations, drills, field missions, training, or contractor presence. The GAAP operationalizes ESS4 through mandatory Codes of Conduct, SEAH-sensitive procedures, gender-responsive communication, and strengthened community protection mechanisms.

SEAH risks associated with the Project primarily relate to:

(i) staff, contractor, and consultant interactions with community members during training and consultations;
(ii) mixed-gender participation in training or capacity-building events; and
(iii) interactions among project personnel within institutional and administrative environments.

These risk areas inform the design of the mitigation actions that follow.

To ensure a gender-responsive and survivor-centred approach, the project will incorporate SEAH prevention and response into all community-facing and training activities. Actions include:

- Mandatory SEAH awareness and Code of Conduct training for all project staff, contractors, trainers, and consultants;
- Integration of SEAH-sensitive messaging into community awareness sessions on early warning systems;
- Deliver short, stand-alone SEAH awareness briefings during all community consultations, drills, and early warning capacity-building exercises to ensure that community members (particularly women, girls, elderly persons, and persons with disabilities) understand SEAH risks, prevention measures, and how to safely access GRM channels;
- Ensuring that women, girls, elderly women, and persons with disabilities are informed of accessible and confidential reporting channels;
- Displaying GRM and SEAH reporting information at all training venues and during consultations;
- Ensuring referral pathways to survivor services, including state hotlines, police units, and psychosocial support, in all marzes. This includes maintaining an updated mapping of governmental and non-governmental survivor support services—including health centres, psychosocial support organisations, police units, hotlines, and shelters—in each project marz to enable effective survivor referral;
- Ensuring that all project facilities used for meetings or trainings offer safe, gender-sensitive spaces;
- Ensuring that SEAH-prevention measures apply equally to interactions among project staff, contractors, consultants, and institutional partners. All personnel engaged under the Project will

sign a SEAH-sensitive Code of Conduct, receive training on acceptable behavior and reporting obligations, and have access to confidential reporting channels within the GRM.

The budget estimate for above-mentioned SEAH risk-related mitigation activities equals to USD 105,000 with linkage to related components and AE Fee the following breakdown:

- Mandatory SEAH/CoC training for all staff & contractors: USD 10,000
- SEAH messages in community awareness and drills: USD 5,000
- GRM accessibility materials (posters, braille, audio): USD 5,000
- Mapping/maintaining referral pathways in all marzes: USD 10,000
- Gender Expert oversight: USD 75,000

The current baseline identifies that no SEAH-integrated training, referral mapping, or reporting system currently exists. The set targets include:

- 100% of project staff, contractors, trainers complete SEAH/Code of Conduct training
- At least 50% of community consultations include a SEAH mini-briefing
- All training venues display SEAH/GRM materials
- At least one mapped referral pathway per marz
- Number of SEAH-related grievances resolved using survivor-centred protocol

These measures implemented under the responsibility of PMU (by the Gender Expert) strengthen gender-responsive risk mitigation and align the GAAP with GCF SEAH requirements.

8.2 GAP Implementation Cost

GAP Costing Methodology: The cost estimates presented in the Gender Action Plan reflect realistic resource needs for nationwide delivery of gender-responsive activities, aligned with the project's Outputs and budget structure. Costs are based on:

(i) unit costs of national workshops/trainings;
(ii) gender-responsive communication product development;
(iii) travel support for women participants in rural areas;
(iv) required consultancy inputs for curriculum development, gender analysis, and SEAH integration; and
(v) a full-time PMU Gender Expert supporting implementation, monitoring, and reporting.

All GAP activities are mapped to specific Output budgets (Outputs 1–3 and PMU), ensuring the Action Plan does not create additional budget lines but is embedded within existing project allocations. This approach ensures full compliance with GCF requirements for resourced gender action, safeguards, and accountability.

Total GAP implementation cost is presented in the table below:

Category	**Total USD**
Outcome 1	143,000
Outcome 2	132,000
Outcome 3	107,000

SEAH	30,000
PMU Gender Expert (5 yrs)	75,000
Grand Total GAP Budget	**USD 587,000**