Meeting of the Board
21 – 24 October 2024
Songdo, Incheon, Republic of Korea
Provisional agenda item 10

GCF/B.40/02/Add.03

30 September 2024

Consideration of funding proposals – Addendum III

Funding proposal package for SAP046

Summary

This addendum contains the following six parts:

a) A funding proposal titled "Strengthening Climate Information and Multi-Hazard Early Warning Systems for Increased Resilience in Azerbaijan";
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:	Strengthening Climate Information and Multi-Hazard Early Warning Systems for Increased Resilience in Azerbaijan
Country(ies):	Azerbaijan
National Designated Authority(ies):	H.E. Mr. Mukhtar Babayev, Minister, Ministry of Ecology and Natural Resources
Accredited Entity:	United Nations Environment Programme (UNEP)
Date of first submission:	2021/07/12
Date of current submission/ version number	2024/09/10 (V.12)

GREEN CLIMATE FUND

Contents

Section A **PROJECT / PROGRAMME SUMMARY**
This section highlights some of the project's or programme's information for ease of access and concise explanation of the funding proposal.

Section B **PROJECT / PROGRAMME DETAILS**
This section focuses on describing the context of the project/programme, providing details of the project/programme including components, outputs and activities, and implementation arrangements.

Section C **FINANCING INFORMATION**
This section explains the financial instrument(s) and amount of funding requested from the GCF as well as co-financing leveraged for the project/programme. It also includes justification for requesting GCF funding and exit strategy.

Section D **EXPECTED PERFORMANCE AGAINST INVESTMENT CRITERIA**
This section provides an overview of the expected alignment of the projects/programme with the GCF investment criteria: impact potential, paradigm shift, sustainable development, needs of recipients, country ownership, and efficiency and effectiveness.

Section E **ANNEXES**
This section provides a list of mandatory documents that should be submitted with the funding proposal as well as optional documents and references as deemed necessary to supplement the information provided in the funding proposal.

Notes to accredited entities on the use of the SAP funding proposal template

- The Simplified Approval Process Pilot Scheme (SAP) supports projects and programmes with a GCF contribution of up to USD 25 million with minimal to no environmental and social risks. Projects and programmes are eligible for SAP if they are ready for scaling up and have the potential for transformation, promoting a paradigm shift to low-emission and climate-resilient development.
- This template is for the SAP funding proposals and is different from the funding proposal template under the standard project and programme cycle. Distinctive features of the SAP funding proposal template are:
  - *Simpler documents*: key documents have been simplified, and presented in a single, up-front list;
  - *Fewer pages*: A shorter form with significantly fewer pages. The total length of funding proposals should **not exceed 20 pages,** annexes can be used to provide details as necessary;
  - *Easier form-filling*: fewer questions and clearer guidance allows more concise and succinct responses for each sub-section, avoiding duplication of information.
- Accredited entities can either directly incorporate information into this proposal, or provide summary information in the proposal with cross-reference to other funding proposal documents such as project appraisal document, pre-feasibility studies, term sheet, legal due diligence report, etc.
- Submitted SAP Pilot Scheme funding proposals will be disclosed simultaneously with submission to the Board, subject to the redaction of any information which may not be disclosed pursuant to the GCF Information Disclosure Policy.
- For more information on how to develop Funding Proposals under the SAP please refer to the Simplified Approval Process (SAP) Funding proposal guidelines.

Please submit the completed form through the GCF Digital Proposal Submission Platform (DPS)[2]

[2] See the DPS user guide for further information on how to access and submit proposals.

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	☒ 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[3]**
	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			50 %	50 %
	☒ Health and well-being, and food and water security			50 %	50 %
	☐ Infrastructure and built environment			Enter number %	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)*		9.32 million Direct: 5.71 million 56% of total population	 Indirect: 3.61 million 36% of total population
A.8.1. Total investment (GCF + co-finance[4])	Amount: 35,092,596.72 USD	**A.8.2 Total GCF funding requested** (max USD 25M)		Amount: 24,994,797.30 USD	
A.9. Type of financial instrument requested for the GCF funding	☒ Grant ☐ Loan[5] ☐ Equity ☐ Guarantees ☐ Others:				
A.10. Implementation period (months)	72 months (6 years)	**A.11. Total project/ programme lifespan (years)**		10 years	
A.12. Expected date of internal approval	5/24/2023	**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?[6]**		Yes ☐ No ☒	
A.16. Executing Entity information	UNEP (through its Regional Office for Europe)				
A.17. Scalability and potential for transformation (max. 100 words)					

[3] Co-financer's contribution means the financial resources required, whether Public Finance or Private Finance, in addition to the GCF contribution (i.e. GCF financial resources requested by the Accredited Entity) to implement the project or programme described in the funding proposal.

The proposed project aims to catalyse a paradigm shift towards risk-informed, evidence-based decision-making, preparedness and early action to reduce disaster risks and avert or minimise climate-related economic and non-economic losses and damages, underpinned by the establishment of reliable climate information services and an end-to-end, people-centred, impact-based multi-hazard early warning system (IB-MHEWS). This will be achieved through systematic investment along the entire value chain for climate information and early warning systems (CIEWS) to facilitate sustained generation, access to and use of reliable climate information to underpin long-term climate-resilient development. The project targets all three paradigm-shifting pathways identified in the draft GCF CIEWS Sectoral Guide. Outputs 1 and 2 of the project will primarily deliver on Pathway 1 through modernisation of hydrometeorological services in Azerbaijan, with a focus on technical capacity development and institutional effectiveness. Delivering on Pathway 1 will enable the creation of relevant, science-based information for IB-MHEWS and Forecast-based Action (FbA), which will be established under Outputs 3 and 4, in line with Pathway 2. In delivering on Pathways 1 and 2, the project will help to remove key barriers to the achievement of Pathway 3, particularly in relation to reliable climate data, analytics and forecasting capacity. The project will create an enabling environment whereby CIEWS can inform strengthened approaches for assessing, avoiding and reducing the risks and adverse impacts of climate-related hazards.

The project will contribute towards ensuring that *"every person on Earth is protected by early warning systems within five years"* as called for by the UN Secretary-General António Guterres to deliver Early Warnings for All. Moreover, it will build on and/or scale up several initiatives with demonstrable success and potential for replication, including:

- Global Framework for Climate Services (GFCS) – The project will contribute to operationalising the GFCS at scale, which is the principal international mechanism for expanding, improving and coordinating the delivery of best-practice climate services for decision-making on climate change.

- UPSHIFT – The project will launch and implement the UPSHIFT program in Azerbaijan in the context of climate change adaptation and disaster resilience. UPSHIFT is an adaptable and scalable approach developed by UNICEF, which supports the development of skills for life and livelihoods and supports youth to positively engage with their local communities as agents of change. The program is recommended by Generation Unlimited[7] as a potential solution that can create results at scale for young people.

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

The Republic of Azerbaijan (hereinafter "Azerbaijan") faces significant levels of disaster risk. The country is ranked 22nd out of 191 countries on the 2022 INFORM Climate Change Risk Index[8] and is increasingly vulnerable to current and future climate change impacts and climate-related hazards. In particular, Azerbaijan is likely to experience increased water stress, as well as an increase in the frequency and/or severity of flood events, heatwaves and extreme rainfall.[9] Lives, livelihoods, ecosystems and assets are threatened by these climate-related hazards. Children, adolescents and women, particularly the poorest and most marginalised, are disproportionately affected by disasters. Communities in mountain areas and coastal zones are especially vulnerable due to their exposure to flooding and mudflows. Azerbaijan has identified the agriculture, water resources, coastal areas, and public health sectors as high priority due to their demonstrated higher vulnerability to climate change.[10] In particular, rising temperatures will have multiple direct impacts on the health and well-being of Azerbaijan's population – for example, increased heat stress and heat-related morbidities, lengthened seasonal window for malaria, and exacerbated air quality issues – with disproportionate impacts on infants, girls, youth and women.[11] Public health is further affected by climate-induced degradation of ecosystems and associated biodiversity loss, which can impact on food security, disease transmission, and carbon sequestration processes.[12] As the climate crisis worsens, the significance of national social protection systems, whose main function is to buffer vulnerable people against such shocks, and which are under increasing strain as climate-driven shocks

[4] Refer to the Policy on Co-financing of the GCF.
[5] Senior loans and subordinated loans.
[6] Azerbaijan does not currently have a country programme.
[7] Launched by the UN Secretary-General in 2018, Generation Unlimited is a leading global Public-Private-Youth Partnership, bringing together global organisations and leaders and civil society champions with young people to co-create and deliver innovative solutions at a global scale. Further information: https://www.generationunlimited.org/
[8] INFORM Climate Change Risk Index, 2022. Available at: https://drmkc.jrc.ec.europa.eu/inform-index/
[9] Republic of Azerbaijan, 2021. Fourth National Communication to the United Nations Framework Convention on Climate Change

such as floods and drought occur with greater frequency and severity, is becoming increasingly clear. Communities whose livelihoods are more sensitive to climate change (e.g., agriculture) have access to fewer formal and informal safety nets to fall back on during shocks and must resort to harmful short-term coping strategies, such as selling productive assets or reducing expenditure on health and nutrition, which have lasting effects on poverty and well-being.

In order to increase its resilience to climate change and climate-related impacts, Azerbaijan requires accurate, timely and actionable weather, water and climate information and a people-centred, impact-based multi-hazard early warning system. However, Azerbaijan's current hydrometeorological network has gaps in its coverage, and lacks automation and the timely generation of warnings on hydrometeorological hazards. The radar network is degraded and lacks a continued maintenance program. Azerbaijan does not have an established national numerical weather prediction model, an operational impact-based flood forecasting model or surface water modelling software packages, which will become especially important as water resources become more strained. Moreover, Azerbaijan's current weather forecasting and prediction process does not allow efficient and timely dissemination of information, and early warning systems are insufficient in scale and scope to ensure adequate risk knowledge, disaster preparedness and response capability of its population for safeguarding lives, infrastructure and assets.

The proposed project will support the establishment of science-based, data-driven climate information services and a people-centred, impact-based multi-hazard early warning system (IB-MHEWS) for the benefit of the government, public and private sectors (including health, agriculture, water resources management, and disaster risk reduction), and communities in Azerbaijan. This will be achieved through four inter-related project Outputs:

1. Strengthened delivery model for climate services and multi-hazard early warning systems (MHEWS)
2. Strengthened observations, monitoring, modelling and prediction of climate and its impacts
3. Enhanced dissemination and communication of climate risk information and multi-hazard early warnings
4. Enhanced climate risk management capacity.

The goal of the project is to catalyse a paradigm shift by establishing capacity in Azerbaijan to make available reliable climate information services and a people-centred IB-MHEWS, which in turn facilitate that policies, decision-making, preparedness and early action are informed by relevant, science-based information and effective communication of timely risk warnings. The interventions are designed to demonstrate the value of climate data and information at all levels of Azerbaijan's economy – from government policies to the decision-making of remote farming communities – and include a specific focus on establishing urban climate services for health. The longer-term transformative impact will be that climate-induced economic and non-economic losses and damages can be averted or minimised, and productivity of climate-sensitive sectors can be enhanced, as government, businesses and communities in Azerbaijan to take informed actions to increase their resilience to climate change and climate-related hazards.

The project Outputs will operationalise the WMO Global Framework for Climate Services (GFCS) in Azerbaijan and are designed to build capacity to implement the four key elements of effective, people centred MHEWS: i) Disaster Risk Knowledge; ii) Detection, monitoring, analysis and forecasting of hazards and possible consequences; iii) Warning dissemination and communication; iv) Preparedness and response capabilities. The project Outputs correspond directly with the four pillars of the UN Early Warnings for All initiative and will thereby directly contribute towards ensuring that *"every person on Earth is protected by early warning systems within five years"*, as called for by the UN Secretary-General António Guterres in March 2022. Moreover, the project will directly contribute to the attainment of selected targets and indicators of the Paris Agreement, Sustainable Development Goal (SDG) 13 on Climate Action, SDG 3 on Good Health and Well-Being, and the Sendai Framework for Disaster Risk Reduction.

B. PROJECT/PROGRAMME DETAILS

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

KEY MESSAGES

- Temperatures in Azerbaijan are projected to rise at a faster rate than the global average, with projected increases in average annual warming up to 2.0 °C by 2040 under RCP4.5.
- Frequency of heatwave events is projected to increase by up to 20 days and 60 days by the end of the 21st century under RCP4.5 and RCP8.5, respectively.
- Rainfall is projected to become more variable, with extended drier seasons and an increase in the intensity of extreme rainfall events.
- Floods are projected to increase in frequency and severity, whilst a significant increase in the probability of severe drought is also projected.
- Rising temperatures are also expected to pose multiple threats to public health in Azerbaijan, leading to increased heat stress and heat-related morbidities, lengthening the seasonal window for malaria, and exacerbating air quality issues.

BACKGROUND

Azerbaijan is a landlocked developing country (LLDC) situated in the southern Caucasus, with a territory of 86,600 km^2.[13] It is bounded to the east by the Caspian Sea with an 850 km coastline and to the north by the Greater Caucasus mountain range. Azerbaijan is covered by extensive network of over eight thousand rivers, which are its main source of irrigation and hydroelectric power.[14] The country has an estimated population of 10.1 million people[15], of which around 56 percent live in urban areas.[16] As of 2022, Azerbaijan's Human Development Index (HDI)[17] value was 0.745, which places it 91st out of 191 countries and territories.[18] The country is ranked 22nd out of 191 countries on the INFORM Risk index 2022, which takes into account the risk of both natural and human-induced hazards.[19]

Azerbaijan has a highly varied climate, with nine out of the eleven Köppen climate zone classifications identified across the country. This includes semi-arid zones in the central and eastern regions (including in the capital, Baku), temperate zones in the north, continental zones in the west, and alpine tundra in the mountainous regions of the Greater and Lesser Caucasus (above 2,700 m) and Nakhchivan (above 3,200 m).[20,21]

CURRENT AND FUTURE CLIMATE RISKS AND IMPACTS

Temperature

In the period 2000-2020, average temperatures across Azerbaijan increased by 0.4–1.5 °C compared to the temperature norms of 1971-2000. The previous decade was the hottest on record.[22] The frequency and intensity of extreme daily temperature events and Excess Heat Factor (heatwaves) has also increased.[23] Temperatures are projected to continue to increase at a rate above the global average increases, particularly under the more extreme emissions scenarios.[24] Under RCP4.5, projected average annual warming in Baku is 0.6°C by 2040 and 1.2°C by 2070, relative to the 1981-2010 reference period. Under RCP8.5, annual mean temperatures are projected to increase up to 0.9 °C by 2040 and 1.6 °C by 2070.[25] Under SSP2-4.5, projected mean temperature rise for the West Central Asia region (which covers Azerbaijan) is 1.4 °C by 2040 and 2.1 °C by 2060, relative to the 1981-2010 reference period.

[13] Republic of Azerbaijan, 2021. Fourth National Communication to the United Nations Framework Convention on Climate Change
[14] Republic of Azerbaijan, 2015. Third National Communication to the United Nations Framework Convention on Climate Change
[15] State Statistical Committee of the Republic of Azerbaijan, 2023
[16] Data sourced from UN Population Division, 2022
[17] The HDI is a summary measure for assessing long-term progress in three basic dimensions of human development: a long and healthy life, access to knowledge and a decent standard of living.
[18] UNDP, 2022. Human Development Report 2021/2022
[19] Joint Research Centre, 2022. INFORM Risk. Available at: https://drmkc.jrc.ec.europa.eu/inform-index/INFORM-Risk/Risk-Facts-Figures
[20] The World Bank Group and Asian Development Bank, 2021. Climate Risk Country Profile: Azerbaijan
[21] Azerbaijans.com, 2021. Climate. Available at: https://www.azerbaijans.com/content_457_en.html
[22] Republic of Azerbaijan, 2021. Fourth National Communication to the United Nations Framework Convention on Climate Change
[23] The World Bank Group, 2021. Climate Change Knowledge Portal – Azerbaijan.
[24] The World Bank Group and Asian Development Bank, 2021. Climate Risk Country Profile: Azerbaijan
[25] Model: CORDEX Middle East North Africa (Bias-adjusted). Model results for an area covering the Lat./Long.: 40.41, 49.87.

Under SSP5-8.5, annual mean temperatures are projected to increase up to 1.6 °C by 2040 and 2.9 °C by 2060.[26] Key climate hazards related to increasing temperatures are outlined below:

- **Heatwaves** and extreme heat events have already increased in frequency, magnitude and duration in Azerbaijan. Under both RCP4.5 and RCP8.5, the country is expected to experience temperatures above 40 °C on an annual basis by the 2090s.[27]
- **Droughts** have increased in both frequency and intensity in Azerbaijan in recent years. Model ensemble projections for Azerbaijan predict a significant increase in the annual probability of experiencing severe drought by the end of the 21st century under all four RCP scenarios. Many regions in Azerbaijan are expected to become chronically drought-affected due to climate change.[28]
- **Reduced air quality:** Air quality issues can be exacerbated by weather and climate. For example, temperature and precipitation affect the frequency or severity of air stagnation conditions, general circulation of pollutants, deposition of soluble and non-soluble pollutants, creation of sulphur aerosols, etc.[29]

Precipitation

Historically (1961–1989), annual precipitation in Azerbaijan averaged 440 mm per year. In more recent decades, total rainfall has varied significantly, but has generally been decreasing. Overall, precipitation across Azerbaijan decreased by about 3.4 % over the past decade.[30] Future projections for annual precipitation vary according to scenario and model. Under SSP2-4.5, CMIP6 models indicate a 1.2% average decrease in total precipitation during June-August (where there are already precipitation shortfalls) in the near term (2021-2040) and a 3.2% decrease by 2100. Under SSP5-8.5, the projected decrease is 1.0% in the near term and 7.5% by the end of the century. Key climate hazards related to precipitation are outlined below:

- **Floods:** Azerbaijan is one of the most flood-prone areas in the world. The frequency of fluvial flood events has increased in recent decades.[31] Projections for extreme rainfall and flood events for several locations across Azerbaijan[32] show an increase in the return period for daily precipitation extreme events under RCP4.5 and RCP8.5 and increased flood water depth of 10-15 centimetres under RCP8.5. Increased frequency and severity of flooding will directly impact on key sectors, including agriculture, water, health, and infrastructure.
- **Landslides and mudflows:** The number of areas that are prone to landslides in Azerbaijan has increased four-times in the past couple of decades. Landslides triggered by heavy precipitation or flood events often transform into matrix flow of soils, boulders and water, known as mudflows.[33] Precipitation-triggered landslides and mud-flows are projected to increase under future climate change.[34]

VULNERABILITY OF AZERBAIJAN TO CLIMATE CHANGE AND CLIMATE-RELATED HAZARDS

Azerbaijan is recognized as vulnerable to climate change impacts, due to a combination of political, geographic and social impacts. It ranks 80th out of 181 countries on the 2019 ND-GAIN index for “Vulnerability”.[35] With regard to the socio-economic and political dimension of hazard vulnerability, Azerbaijan ranks 45th out of 191 countries on the 2022 INFORM Risk index for “Vulnerability”.[36] The sectors identified as having higher sensitivity to climate change in Azerbaijan are agriculture, water resources, coastal zones, and health.[37] The vulnerability of these sectors, along with biodiversity and priority sectors of the Global Framework for Climate Services (GFCS), is summarised in Section 5 of the Pre-Feasibility Study (Annex 2).

EXPOSURE TO CLIMATE HAZARDS AND CLIMATE-INDUCED LOSS AND DAMAGE

[26] IPCC, 2023. IPCC WGI Interactive Atlas: Regional Information. Available at: https://interactive-atlas.ipcc.ch/
[27] The World Bank Group and Asian Development Bank, 2021. Climate Risk Country Profile: Azerbaijan
[28] Republic of Azerbaijan, 2021. Fourth National Communication to the United Nations Framework Convention on Climate Change
[29] WMO Air Quality and Climate Change Brief; https://public.wmo.int/en/bulletin/implications-climate-change-air-quality
[30] Republic of Azerbaijan, 2021. Fourth National Communication to the United Nations Framework Convention on Climate Change
[31] Republic of Azerbaijan, 2021. Fourth National Communication to the United Nations Framework Convention on Climate Change
[32] Baku, the Turyanchay catchment in the Greater Caucasus, and the Kura lowlands
[33] UNDP GEF Kura II Project, 2019. Flood Risk Management - Azerbaijan
[34] See Feasibility Study (Annex 2) – Section 4.2
[35] University of Notre Dame, 2022. ND-GAIN Rankings (Scores for 2019). Available at: https://gain.nd.edu/our-work/country-index/rankings/
[36] INFORM Risk, 2022. Available at: https://drmkc.jrc.ec.europa.eu/inform-index/INFORM-Risk
[37] Republic of Azerbaijan, 2021. Fourth National Communication to the United Nations Framework Convention on Climate Change

Azerbaijan is exposed to multiple climate-related hazards, including floods, drought, landslides and extreme temperatures. The country faces significant levels of disaster risk, which are driven strongly by the exposure component of risk.[38] With regard to natural hazard exposure, Azerbaijan ranks 66th out of 191 countries on the 2022 INFORM Risk index "Natural Hazard Exposure" dimension.[39] Moreover, Azerbaijan is ranked 22nd out of 191 countries on the 2022 INFORM Climate Change Risk Index.[40] Floods are the most frequently occurring natural hazard in Azerbaijan, accounting for 41% of average annual natural hazard occurrence in the period 1980-2020.[41] Annual average losses (AAL) for climate-related hazards in Azerbaijan are estimated as follows: $300 million for floods, $6 million for droughts and $0.3 million for landslides in 2020USD.

GAPS AND NEEDS FOR CLIMATE INFORMATION AND EARLY WARNING SYSTEMS

The key gaps and needs for climate information and early warning systems in Azerbaijan are summarised in the table below. Further details are provided in the Pre-Feasibility Study (Annex 2).

Table 1. Gaps and needs for climate information and early warning systems in Azerbaijan

Component	Gaps	Needs
Risk Knowledge	• Limited information on disaster risk • No established methodologies for disaster risk analysis, assessment, and mapping • Lack of clarity in roles, responsibilities, and coordination of relevant institutions • Limited hazard mapping and risk assessments • Lack of a centralised system for recording disaster risk data and information • Lack of data standardisation • No methodology for collecting and recording information on disaster losses	• Establishment of a standardised methodology for hazard mapping and risk assessments for multiple hazards • Hazard mapping and risk assessments for the entire territory of Azerbaijan • Centralised system and methodology for collecting and recording disaster-related data and information • Protocols for data standardisation
Observations and Forecasting	*Observation network:* • Lack of full automatization of observational infrastructure • No life cycle, maintenance or calibration plans and SOPs for automated observations • No metadata availability or data quality assurance for AWS data *Data collection practices and capabilities:* • No automated or real-time data transfer or archiving of AWS data *ICT infrastructure:* • Lack of modern forecaster tools for production or infrastructure for data transfer and archiving • Insufficient maintenance of IT equipment and systems *Modelling and forecasting:* • No forecast production from NWP data • Lack of adequate data and tools for forecasters • No hydrological, hydraulic, or water resources modelling for forecasting purposes • Lack of capacity for impact-based forecasting *Warning and advisory services:*	*Observation network:* • Establishment of capacities for maintenance, calibration, life cycle, and quality assurance of automated observation infrastructure • Upgrade of the observational network telemetry and operational capacities *Data collection practices and capabilities:* • Sufficient software and IT hardware for data collection, transfer, and management *ICT infrastructure:* • Development/acquisition of an observation database • Qualified IT experts and capabilities • Modernisation of the whole value chain of service production *Modelling and forecasting:* • Capacity to operate and handle NWP data • Limited area modelling (LAM) capabilities • Modern forecaster software with relevant models and observational data • Establishment of a multi-hazard approach and capacity for impact-based forecasting *Warning and advisory services:*

[38] The World Bank Group and Asian Development Bank, 2021. Climate Risk Country Profile: Azerbaijan
[39] INFORM Risk, 2022. Available at: https://drmkc.jrc.ec.europa.eu/inform-index/INFORM-Risk
[40] INFORM Climate Change Risk Index, 2022. Available at: https://drmkc.jrc.ec.europa.eu/inform-index/
[41] The World Bank Group, 2021. World Bank Climate Change Knowledge Portal – Azerbaijan.

	• Lack of capacity to produce weather warnings in modern formats • Limited number of hazards addressed in warnings • Insufficient data available for analysis of severe weather *Climate services:* • Lack of timeliness due to observation collection lag (15 days) and costly tools • Lack of automated analysing and calculations for climatological values and parameters	• Tools and software for producing digitalised weather warning products • Increased number of weather phenomena addressed in warnings (multi-hazard approach) • Establishment of common warning criteria and levels among different stakeholders *Climate services:* • Automated data collection procedures • Acquisition of an automated climatological workstation software • Generation of tailored, sector-specific climate information products and services
Communication and Dissemination	• Lack of a modern production and dissemination system or modern product formats • Lack of clarity in the roles and responsibilities for warning issuers • Insufficient lead-time and lack of impact information in warnings • No implementation of CAP	• Clarification of roles and responsibilities for warning communication and dissemination • Implementation of a semi-automated/ automated forecast production system • Implementation of CAP messaging • Use of multiple communication channels to disseminate information and warnings
Preparedness and response	• Limited involvement of ministries, regional authorities, and other relevant stakeholders in response planning • Lack of local-level disaster management plans and outdated national level plans • Limited public awareness regarding climate information services, early warning systems, and disaster risk management	• Involvement of multiple stakeholders in preparedness and response activities (beyond MoES and NHMS) • Clarification of roles and responsibilities for disaster preparedness and response • Public awareness and education campaigns, including targeting for vulnerable groups • Development of community-level disaster risk management plans

POLICY CONTEXT

Azerbaijan does not currently have a formal national policy or plan focused on climate change adaptation. However, the country has identified a number of climate vulnerabilities and adaptation measures through development plans, laws and reports to the United Nations Framework Convention on Climate Change (UNFCCC). These documents identify the need for extended capacity within the country's existing CIEWS framework as an integral piece of the country's overall adaptation strategy. Relevant policies, plans and other frameworks and a description of how this project aligns with these frameworks are identified in Section 6 of the Pre-Feasibility Study (Annex 2).

KEY BARRIERS

The main barriers to the delivery of reliable climate information services and people-centred, impact-based multi-hazard early warning systems in Azerbaijan are: (1) Lack of an institutional framework or mechanism for delivering coordinated and integrated climate services and early warning systems (EWS), (2) Gaps in capacity, coverage, and automation of the hydrometeorological observation network, (3) Lack of national forecasting models and capacity to produce tailored information products, (4) Insufficient communication of risk information and early warnings, (5) Limited risk knowledge and capacity to use climate services and EWS for preparedness and response.

PROBLEM STATEMENT

As a landlocked developing country (LLDC) with numerous and diverse climatologies, Azerbaijan is increasingly vulnerable to current and future climate change impacts and climate-related hazards. The country is likely to experience increased water stress, as well as an increase in the frequency and/or severity of flood events, heatwaves and extreme rainfall. Lives, livelihoods, ecosystems and assets are threatened by these climate-related hazards. Communities in mountain areas and coastal zones are particularly vulnerable due to their exposure to flooding and mudflows. Azerbaijan has identified the agriculture, water resources, coastal areas, and public health sectors as high priority due

to their demonstrated higher vulnerability to climate change.[42] Rising temperatures will have multiple direct impacts on the health and well-being of Azerbaijan's population with disproportionate impacts on women and girls.[43] Public health and well-being are further affected by climate-induced degradation of ecosystems and associated biodiversity loss, which can impact on food security, disease transmission, and carbon sequestration.[44]

To increase its resilience to climate change and reduce the impact of climate-related hazards, Azerbaijan requires accurate, timely and actionable weather, water and climate information and people-centred, impact-based multi-hazard early warning systems. However, Azerbaijan's current hydrometeorological observation network has gaps in its coverage and lacks automation and telemetry capacity. Azerbaijan does not have a national numerical weather prediction (NWP) model, impact-based forecasting capabilities, or hydrological modelling software – all of which will become especially important as climate change impacts intensify. Moreover, the country's current weather forecasting and warning production process does not allow efficient and timely dissemination of information, and early warning systems are insufficient in scale and scope to ensure adequate risk knowledge, disaster preparedness, and response capabilities of the population for safeguarding lives, livelihoods, ecosystems, and assets.

"WITHOUT THE PROJECT" SCENARIO

Without the proposed project, the National Hydrometeorological Service will continue to rely on external information sources and incomplete data to generate basic weather forecasts that are insufficient to deliver timely, reliable and tailored information and warnings to government entities, sectors and communities across Azerbaijan. The roles, responsibilities, and functions of key stakeholders in warning communication and disaster preparedness will remain unclear and uncoordinated, and capacity for anticipatory action will remain inadequate. Data and information critical to well-informed, science-based decision making for resilience building and climate change adaptation will not be available or systematically collected, and maladaptation may result. Moreover, the population of Azerbaijan will continue to lack awareness and understanding on climate-related hazards and associated risks and will have limited capabilities to take proactive actions to reduce their vulnerability and increase their resilience to climate change.

PROPOSED ACTIONS FOR REDUCING VULNERABILITY

The project aims to increase the resilience and reduce the vulnerability of government, sectors and communities in Azerbaijan to climate change and climate-related hazards through the establishment of science-based, data-driven climate information services and a people-centred, impact-based multi-hazard early warning system (IB-MHEWS). Reliable climate information services will equip decision-makers at all levels in Azerbaijan with relevant information to make evidence-based decisions to better manage climate-related risks. People-centred IB-MHEWS will empower individuals and communities with the knowledge and forewarning to take timely and appropriate actions to protect lives and livelihoods so as to reduce the impact of extreme weather and climate change. Specifically, this will be achieved through the following four project Outputs:

- **Output 1** will provide an enabling environment for increasing adaptive capacity and reducing vulnerability by strengthening institutional frameworks and coordination for climate services and early warning systems, including through development of a financial strategy and business model for long-term sustainability. By enhancing inter-institutional collaboration and knowledge management, the project will reduce the risk of maladaptation resulting from inadequate risk knowledge and failure to account for varying capacities and needs of different stakeholders.
- **Output 2** addresses the need for modernised hydrometeorological observation networks that provide foundational data underpinning localised weather, water and climate predictions. In turn, this will facilitate the generation of timely forecasts and warning of climate-related risks and hazards and targeted climate analytics tailored to climate-sensitive sectors (e.g., agriculture, health, disaster risk reduction, water resources management). Moreover, Output 2 will strengthen urban climate services through improved coordination, expanded air quality monitoring, and development of health sector-specific analytics and decision support.
- **Output 3** addresses the need to improve communication and dissemination of climate information and multi-hazard early warnings through the establishment of a people-centred IB-MHEWS, with targeted capacity building for community MHEWS. This will be guided by the co-development of a socially inclusive, child- and

[42] UNDP, 2019. GCF Readiness and Preparatory Support Proposal: National Adaptation Plan (NAP) Support Project for adaptation planning and implementation in Azerbaijan
[43] Carbon Brief, 2020. Mapped: How climate change disproportionately affects women's health.
[44] Peel, G.T. *et al.*, 2017. Science. Biodiversity redistribution under climate change: Impacts on ecosystems and human well-being

gender-responsive communication strategy, which will inform people-centred approaches that consider specific information and access needs particularly of the most vulnerable population groups.

- **Output 4** addresses the need to improve capacities at all levels for disaster preparedness, including through targeted awareness-raising and education on climate-related hazards, early warning systems and risk management. A key focus of Output 4 will be to establish capacity for Forecast-based Financing (FbF) in Azerbaijan, whereby MHEWS-linked FbF leverages shock-responsive social protection (SRSP) as an enabler. SRSP is an innovative mechanism through which national social protection systems are adapted to climate change. In this context, SRSP has the potential to increase the coping, adaptive and transformative capacities of vulnerable groups in Azerbaijan and serve as an enabler in scaling up anticipatory action for climate shocks.

The proposed interventions are designed to address the key barriers to delivering reliable climate information services and people-centred IB-MHEWS that provide data, information and knowledge underpinning better preparedness and resilience, which in turn reduces climate change vulnerability. To achieve optimal structural impact, the project will strengthen and leverage existing (limited) capacities for climate information and early warning systems, rather than deploying new parallel systems and processes.

THEORY OF CHANGE

The transformative goal of the project is to increase the resilience of climate-sensitive sectors and communities in Azerbaijan by ensuring the availability and access to reliable climate information services and an end-to-end, people-centred, impact-based multi-hazard early warning system (IB-MHEWS) covering Azerbaijan. The project is designed to ensure a holistic and integrated approach to strengthening early warning systems in Azerbaijan as a critical component of climate change adaptation and disaster risk reduction. By addressing a range of cross-cutting adaptation options concurrently – namely, disaster risk management, climate services, *and* early warning systems – the adaptation and risk reduction benefits of the project will be amplified.[45]

The Theory of Change diagram below shows the intervention logic proposed by the project and details the causal links and pathways from activities to outputs and project-level outcomes, along with the underlying assumptions, barriers and risks. The proposed outputs, activities and sub-activities are further detailed in Section B.2.1.

The project aims to achieve impact via three interlinked outcomes, whereby Outcomes 1 and 2 provide an enabling environment for Outcome 3. The intended outcomes are aligned with the three paradigm-shifting pathways for climate information and early warning systems (CIEWS) identified in the corresponding GCF sectoral guide.[46] The project outcomes will be achieved via four project outputs, which are designed to deliver on the four interconnected pillars of MHEWS: i) Risk Knowledge; ii) Observations and Forecasting; iii) Warning Dissemination and Communication; iv) Preparedness and Response Capabilities. The contribution of the project outputs to outcomes is summarised below:

- ***Outcome 1: Relevant, science-based climate and disaster risk information is widely available and accessible –*** The project will work with the government and key climate-sensitive sectors in Azerbaijan to improve inter-institutional and inter-sectoral collaboration for the collection, management and exchange of climate-related data and information. It will also strengthen capacities for multi-hazard risk and vulnerability assessments and collection and analysis of weather, water, climate and air quality data. This will be delivered through Outputs 1 and 2.
- ***Outcome 2: Well-informed, evidence-based decision-making is supported by reliable climate information services and impact-based MHEWS –*** The project will enhance provision of climate information services by investing in the requisite digital technologies, e-infrastructure, and technical and institutional capabilities to fully operationalise the Global Framework for Climate Services at the national level. Reliable climate services will provide the data, forecasts and predictions that underpin effective MHEWS. Investment in early warning systems will go beyond Pillar 2 (Observations and Forecasting) to cover the entire MHEWS value chain. This will be delivered across all four Outputs.
- ***Outcome 3: Increased resilience and reduced vulnerability of sectors and communities to the adverse impacts of climate change and climate-related hazards –*** Outcomes 1 and 2 provide an enabling

[45] The IPCC AR6 reported with *high confidence* that "A range of adaptation options, such as disaster risk management, early warning systems, climate services and risk spreading and sharing approaches have broad applicability across sectors and provide greater risk reduction benefits when combined".
[46] GCF, 2022. Climate Information and Early Warning Systems Sectoral Guide

environment for resilience-building and vulnerability reduction of climate-sensitive sectors and communities. This will be achieved by ensuring that sectors and communities have the knowledge and capacity to access, use, and act on impact-based forecasts and warnings, and sector-specific climate analytics to reduce disaster risks and avert or minimise climate-related losses and damages, including loss of life. Well-functioning early warning systems are also critical to enhancing public health and safety. This will be delivered through Outputs 2 – 4.

In addition to the abovementioned outcomes, mainstreaming gender equality and social inclusion is a cross-cutting priority of the project, which will translate into gender co-benefits. This includes deepening understanding of the root causes of vulnerability and gendered and intersectional risks (Output 3), promoting and supporting women's full, equal and meaningful participation at all levels (Outputs 1-4), and promoting sex- and age-disaggregated data collection and reporting (Output 1 and M&E).

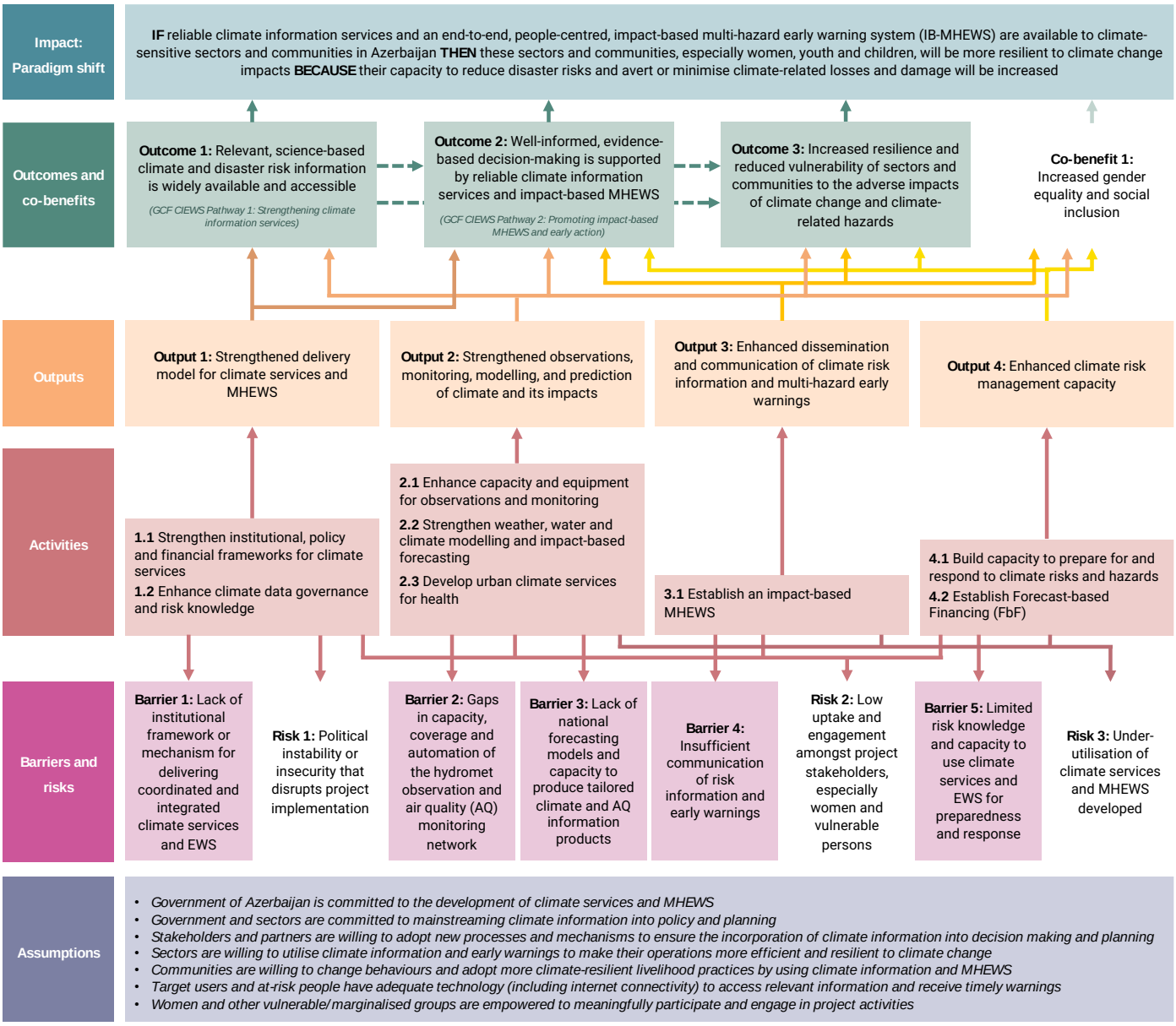

Figure 1. Theory of Change

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

This section outlines key components of the project and provides an overview of the proposed interventions. Further detail is provided in Section 14 of Pre-Feasibility Study (Annex 2).

Output 1: Strengthened delivery model for climate services and multi-hazard early warning systems (MHEWS)

Activity 1.1: Strengthen institutional, policy and financial frameworks for climate services

Sub-Activity 1.1.1 – Develop a National Framework for Climate Services

This sub-activity will develop a National Framework for Climate Services (NFCS) for Azerbaijan, providing an institutional mechanism to coordinate, facilitate and strengthen collaboration among national institutions to improve the co-production, tailoring, delivering and use of science-based climate predictions and services at the national level.[47] The NFCS will focus on improving climate services focused on the five priority sectors of the Global Framework for Climate Services (GFCS): agriculture and food security, disaster risk reduction, energy, health, and water.

Sub-Activity 1.1.2 – Establish a User Interface Platform

The project will establish and promote the use of institutional collaborative platforms to enhance knowledge on climate services and identify lessons learned to scale up success. A User Interface Platform (UIP) will be established as a means to strengthen interaction between NHMS – as climate information provider – and users of climate services, to promote risk-informed, science-based decision-making in relation to climate variability and change.

Sub-Activity 1.1.3 – Develop a national financial strategy for sustainable climate services

Building on the NFCS (Sub-Activity 1.1.1), the project will support the Government of Azerbaijan to develop a financial strategy for climate services to ensure that the NHMS has the means to sustain the ongoing operation of its mandated services, as capacity to deliver climate analytics with commercialisation potential is developed.

Activity 1.2: Enhance climate data governance and risk knowledge

Sub-Activity 1.2.1 – Develop a National Climate Data and Information Management Strategy

This sub-activity will support the Government of Azerbaijan and NHMS to improve management of climate-related data and information through the development of a national strategy outlining standards and protocols for sourcing, securing, managing, assessing, and cataloguing climate-related data, as well as the infrastructure and responsibilities for data exchange, analysis, service provision, and governance between NHMS and relevant agencies.

Sub-Activity 1.2.2 – Build capacity for multi-hazard risk profiling and vulnerability assessments

This sub-activity will support identification, mapping and quantification of risks in relation to climate-related hydrological hazards, which will be made available through a digital portal. In addition, this sub-activity will support local governments to conduct child-centred multi-hazard risk and vulnerability assessments to inform short- to medium-term preparedness actions, as well as integration of child-sensitive approaches to longer term planning, policies and programmes.

Output 2: Strengthened observations, monitoring, modelling and prediction of climate and its impacts

Activity 2.1: Enhance capacity and equipment for observations and monitoring

Sub-Activity 2.1.1 – Expand and optimise the hydrometeorological observation network

This sub-activity will enhance the hydrometeorological observation and monitoring network in Azerbaijan. This will include the installation of 20 automatic weather stations, two weather radar systems, one upper air sounding system, 10 automated snow depth sensors, and four mobile discharge meters. The project will also ensure that new stations are reporting in compliance with the WMO Global Basic Observing Network (GBON) regulations.

Sub-Activity 2.1.2 – Strengthen the Quality Management System (QMS) in NHMS and develop an Operation and Maintenance (O&M) Plan

[47] WMO, 2018. Step-by-step Guidelines for Establishing a National Framework for Climate Services

The project will support NHMS to implement a robust quality management system (QMS) for weather, water, and climate services to achieve compliance with the ISO 9001 standard. In addition, the project will work with NHMS to co-develop an Operation and Maintenance (O&M) Plan, which will outline how specific O&M needs will be addressed both during and post implementation of the project. The O&M Plan will consider all existing and required financial, human, technological and logistic resources to ensure continuity of observations in the long term, including planning for staffing, maintenance of equipment, and data management.

Sub-Activity 2.1.3 – Upgrade the Hydromet Situation Centre

The project will transform NHMS' capacity for data collection, management, analysis, and exchange through ICT investments, technical upgrades, and capacity development within the existing Hydromet Situation Centre in Azerbaijan. This will include establishing an automated observation data collection system, centralised database management system (DBMS) and a message switching system.

Sub-Activity 2.1.4 – Establish Internet of Things (IoT) approaches

In partnership with the International Centre for Theoretical Physics (ICTP), this sub-activity will pilot the use of low-cost weather stations based on IoT technology. The aim of the pilot will be to develop and demonstrate the potential of low-cost and low-power IoT sensors to provide weather data at high resolution in data-sparse locations. The IoT pilot will be complemented by workshops, peer learning, and hands-on training.

Activity 2.2: Strengthen weather, water and climate modelling and impact-based forecasting

Sub-Activity 2.2.1 – Establish local Numerical Weather Prediction (NWP) and modelling processes

A key contributor to the project's paradigm shift potential is the establishment of in-country capacity to implement Numerical Weather Prediction (NWP), which is the basis on which all weather and climate services are built. This sub-activity will invest in the hardware needed to enable operational installation of NWP in Azerbaijan and accordingly provide technical support to strengthen NHMS capacity for the following: 1) Implementation and configuration of NWP; 2) Collection and operationalisation of data required for model operation; 3) Development of programmes and procedures for verification of results; 4) Inclusion of assimilation procedures; and 5) Inclusion of ensemble techniques. To complement capacity development on NWP, this sub-activity will also provide targeted training to NHMS to develop, use and understand the outcomes of hydrological and hydraulic models.

Sub-Activity 2.2.2 – Establish multi-hazard impact-based forecasting tools and capabilities

The project will support the operationalisation of a state-of-the-art forecast production and verification system for Azerbaijan – SmartMet,[48] which will provide an e-infrastructure platform for NHMS to access, generate and use all relevant information and analytics on weather, water, and climate. It will also establish in-country capacity to integrate hazard modelling with risk and vulnerability information to generate impact-based forecasts for multiple hazards.

Sub-Activity 2.2.3 – Co-produce sector-specific climate analytics and information products for public and private stakeholders

Building on the establishment of impact-based forecasting capacity (Sub-Activity 2.2.2), the project will support the NHMS and key stakeholders to co-produce sector-specific actionable information products for *i.a.* agriculture, disaster risk reduction, energy, health, shock-responsive social protection, and water resource management.

Activity 2.3: Develop urban climate services for health

Sub-Activity 2.3.1 – Develop an Integrated Urban Services Framework

To complement the NFCS (Sub-Activity 1.1.1), an Integrated Urban Services Framework (IUSF) will be developed. The IUSF will define institutional mandates, roles and responsibilities and include a comprehensive strategy for service delivery in relation to urban weather, climate, hydrological and air quality services.

Sub-Activity 2.3.2 – Enhance the air quality monitoring system

[48] SmartMet is a weather information and forecast production system developed by FMI

The project will enhance the air quality monitoring system in Azerbaijan through the provision of technical guidance and hands-on training for operation and maintenance of existing stations.

Sub-Activity 2.3.3 – Co-produce targeted analytics and decision support for health

This sub-activity will support the co-development and co-production of targeted analytics and tools to provide decision-makers with relevant, science-based information to proactively manage climate-related health risks. Working with NHMS and the Ministry of Health (MoH), the project will support the integration of weather, climate, epidemiological, and other relevant data to generate health risk forecasts that anticipate when and where changes in key parameters may increase the likelihood for climate-related health impacts to occur. Targeted analytics will be produced and made accessible through SmartMet (Sub-Activity 2.2.1). Workshops will be conducted to support capacity building of the MoH, TABIB[49], and other related authorities to identify the required data to assist with analysis, modelling and decision making and integrate climate information into health service provision, including digital integration where needed. The project will also organise a study tour for key stakeholders to a country where the EWS is already linked with the health sector to facilitate knowledge transfer and sharing of good practices.

Output 3: Enhanced dissemination and communication of climate risk information and multi-hazard early warnings

Activity 3.1: Establish an impact-based multi-hazard early warning system (MHEWS)

Sub-Activity 3.1.1 – Strengthen MHEWS organisational and decision-making processes

The project will work with national stakeholders to define the functions, roles and responsibilities of MHEWS actors and include them in standard operating procedures (SOPs) and develop warning communication protocols to ensure coordination between NHMS and downstream dissemination channels. The project will also support local administrations to strengthen existing public broadcasting and reporting mechanisms to ensure that risk information is disseminated to vulnerable population groups and strengthen local government efforts to make risk information more freely available to and accessible by the public.

Sub-Activity 3.1.2 – Co-develop a socially inclusive, child- and gender-responsive communication strategy

The project will engage a full-time Gender Equality and Social Inclusion (GESI) expert who will be responsible for overall child rights and gender mainstreaming and ensuring that child and gendered needs are integrated into the MHEWS. As part of this sub-activity, the GESI expert will engage in multi-stakeholder dialogue to analyse the effectiveness of existing warning communication and dissemination systems and identify the ways in which child rights and gender and other intersectional vulnerabilities impact on the accessibility, reach and understanding of early warning. Informed by these consultations, the project will co-develop a social inclusive and gender-responsive communication strategy for MHEWS tailored to needs and vulnerabilities of specific population groups.

Sub-Activity 3.1.3 – Establish a national multi-hazard alert system

This sub-activity will support the establishment of a national multi-hazard alert system for the communication and dissemination of authoritative information related to high-impact weather, water, climate and air pollution events across Azerbaijan. The Alert system will be integrated within SmartMet (established under Sub-Activity 2.2.1) and will have the capability of encoding the information in Common Alerting Protocol (CAP) format.

Sub-Activity 3.1.4 – Build capacity for community MHEWS

This sub-activity will deliver targeted capacity building and training for community MHEWS that link to the national system and extend its reach to the local level, with a focus on ensuring the dissemination of climate information and multi-hazard early warning messages targeted to the needs of marginalised and/or vulnerable groups.

Sub-Activity 3.1.5 – Engage children and youth in MHEWS

This sub-activity aims to engage 5,000 adolescents and young people in MHEWS through various national and local platforms (e.g., Youth Houses and schools) and outreach methods – including workshops, peer education, and youth-led community initiatives. Specifically, this sub-activity will conduct a series of community-based workshops to promote

[49] TABIB is the Azerbaijani Management Union of Medical Territorial Units, responsible for managing medical institutions related to the application of compulsory medical insurance and carrying out control in this field.

innovative and results-based thinking approaches in the context of MHEWS. Targeted support and mentoring will be provided to facilitate the implementation of the most promising solutions, with the overall aim being to maximise the involvement and child-responsiveness of MHEWS at the local level. This sub-activity will also support a peer education program, whereby young people are trained to become advocates within their communities on MHEWS and climate resilience issues. Collectively, these interventions will facilitate scale-up of the UPSHIFT programme[50] in Azerbaijan in the context of climate change and disaster risk reduction. Additionally, this sub-activity will help to create and strengthen networks among young people and other stakeholders involved in early warning systems and climate resilience. It will also equip national informal platforms with the necessary tools and resources to engage adolescents and young people in these fields, ensuring the transfer of skills and experience to the next generation, supported by youth champions from the project.

Output 4: Enhanced climate risk management capacity

Activity 4.1: Build capacity to prepare for and respond to climate risks and hazards

Sub-Activity 4.1.1 – Strengthen national, sectoral and community preparedness capabilities

This sub-activity will develop standard operating procedures (SOPs) for disaster preparedness, as well as strategies to maintain preparedness for longer return-periods and cascading hazard events. At the sectoral level, the project will focus on building preparedness capabilities for key climate-sensitive sectors. At the community level, the project will utilise participatory co-development approaches to ensure that SOPs and plans are appropriate to local contexts.

Sub-Activity 4.1.2 – Increase public awareness and education on climate-related hazards, early warning systems and risk management

The project will conduct a nationwide awareness-raising and education campaign through workshops, seminars and media communications to improve the public risk knowledge that underpins preparedness to climate-related hazards. The campaign will have several objectives, including: i) Improve climate change literacy; ii) Inform about the new multi-hazard early warning system; and ii) Enhance disaster risk knowledge.

Sub-Activity 4.1.3 – Conduct a targeted risk awareness and education program for women

This sub-activity aims to empower women and other potentially marginalised gender groups through enhanced awareness and understanding of climate-related hazards and risks, to support increased participation in disaster risk management. It will establish localised women's networks, *i.a.* to deliver climate risk education workshops.

Sub-Activity 4.1.4 – Disseminate targeted education materials for children and youth

Building on the nationwide awareness-raising and education campaign (Sub-Activity 4.1.2), the project will produce and disseminate targeted educational materials for different age groups in collaboration with the Ministry of Education, MENR and MoES. This sub-activity targets younger children through formal education channels to build foundational knowledge and capacity in relation to climate resilience and disaster risk management. As part of this intervention, the project will provide guidance on mainstreaming the latest climate change science into national curricula and advocate for skills-based learning approaches to empower children, adolescents and teachers to participate in climate resilience activities and encourage children to become part of the solution to climate change.

Activity 4.2: Establish Forecast-based Financing (FbF)

Sub-Activity 4.2.1 – Develop a Roadmap for FbF

This sub-activity will develop a Roadmap for Forecast-based Financing (FbF) in Azerbaijan – an innovative mechanism whereby anticipatory actions are pre-planned based on in-depth forecast information and risk analysis, and resources are automatically allocated when a specific threshold is reached.[51]

Sub-Activity 4.2.2 – Strengthen capacities for climate shock-responsive social protection (SRSP)

The project will strengthen capacities within the government and national social protection system to mainstream increased resilience to climate-driven shocks through the timely scale-up of social protection mechanisms triggered by

[50] UPSHIFT is a social innovation and social entrepreneurship programme of UNICEF that empowers disadvantaged youth by providing them with the skills and resources needed to identify and deal with local community issues – in this case, focusing on the impacts of climate change.
[51] IFRC, 2023. What is Forecast-based Financing? Available at: https://www.forecast-based-financing.org/about/

impact-based forecasts and MHEWS. This sub-activity will focus on building capacity of the Ministry of Labour and Social Protection of the Population (MLSP) and other key actors at the national and local levels to institutionalise MHEWS-linked FbF delivered through SRSP. Capacity development activities will cover both the establishment of technical mechanisms, as well as strengthening the enabling environment to support the successful implementation of FbF at national and local levels. This will include improving understanding of key concepts and linkages between SRSP and climate-driven shocks, FbF, and forecast-based action (FbA); identifying potential legal reform; tailored training and skills development; advocacy and social mobilisation; and creating opportunities for international experience sharing to enable government actors to learn from international good practices.

Sub-Activity 4.2.3 – Create a national registry for enhanced community- and household-level targeting for FbF

Adequate data and management information systems (MIS) are a key component of enabling FbF through SRSP. This sub-activity will establish a 'virtual national registry' within the existing data management ecosystem to enable the analysis and targeting of FbF through SRSP at the community and household level.

Sub-Activity 4.2.4 – Develop a model for FbF linked to SRSP

Building on the Roadmap for FbF, this sub-activity will support the development of a model, triggers, and protocols for the scale-up of the national social protection system in Azerbaijan to climate-driven shocks. A model for FbF will be identified that can be undertaken through the national system to lessen the time required to deliver SRSP following a climate shock, as well as explore options to link with the impact-based MHEWS.

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
1	☐	☐	☐	☐	☒	☐	☐	☐
2	☐	☐	☐	☐	☒	☒	☐	☐
3	☐	☐	☐	☐	☒	☒	☐	☐

Co-benefit number	Co-benefit					
	Environmental	**Social**	**Economic**	**Gender**	**Adaptation**	**Mitigation**
1	☐	☐	☐	☒	☐	☐

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

Accredited Entity (AE)

UNEP will be the Accredited Entity for the project and will be responsible for managing the implementation, financial management, evaluation, reporting and closure of the activities under the project. UNEP will monitor and supervise the execution of the project and ensure the proper management and application of GCF Grant Proceeds. UNEP will ensure that the Grant Proceeds are utilised in accordance with the terms of the Funded Activity Agreement, to be entered into between GCF and UNEP, and the Accreditation Master Agreement. UNEP will also assume the role of Executing Entity (EE) through its Regional Office for Europe, as outlined in the sub-section below.

Project Management Unit (PMU)

At the request of the NDA, UNEP will set up and manage a Project Management Unit (PMU) in Baku, Azerbaijan, working with its sister agencies in line with the UN Delivering as One modality and drawing on its Global Support Services Agreement with the UN Office for Project Services (UNOPS), where necessary. The PMU will undertake day-to-day operations of managing the project. In addition to this role, the PMU will also assume liaison functions with national government entities and stakeholders and will coordinate with the UNEP Regional Office for Europe and

Technical Partners throughout project implementation and reporting, in line with their obligations under the respective legal instruments and will coordinate to ensure that reports are received.

The PMU will consolidate all half-yearly progress reports and quarterly financial reports, including co-financing reports and annual audit reports, from the Technical Partners and submit these to the AE. The PMU will provide guidance and source expertise as needed on project management, financial management, procurement and technical issues. It will establish contact with other development partners working in Azerbaijan to ensure that activities in related fields are complementary, and to seek opportunities for collaboration. The PMU will also provide secretariat services to the Project Steering Committee (PSC).

The PMU will also comprise work capacity at the level of the UNEP (through its Regional Office for Europe). A UNEP Project Coordinator will provide overall guidance and support for executing the project and will be assigned to this role by UNEP as EE. The cost of the Project Coordinator will be borne by UNEP as co-financing to the project.

Executing Entity (EE)

UNEP will also assume the role of Executing Entity (EE) through its Regional Office for Europe to provide technical and implementation guidance and will facilitate cooperation and coordination among the partners and stakeholders engaged in project implementation. The Accredited Entity (AE) will put in place an internal arrangement to allow it to perform its function as the EE. UNEP, in its role as EE, will undertake fund management, coordinate reporting, and ensure compliance with UN rules and procedures and GCF reporting requirements.

UNEP will execute the project in line with its programme manual and standard business procedures and will contract international and local consultants and Technical Partners to undertake relevant activities as appropriate. UNEP will leverage the services of other UN partners, such as UNOPS or ICAO, for reasons of efficiency and effectiveness. In this regard, it is noteworthy that UNEP has a Global Support Services Agreement with UNOPS enabling UNEP to operate at the country level without necessarily having a country office. UNEP also has a Memorandum of Understanding with ICAO. UNEP in its EE capacity, through its Regional Office for Europe, will be accountable to UNEP Early Warning and Assessment Division in its role as AE for project execution at the national level and for efficient and effective use of resources.

Technical Partners

The project will benefit from the expertise of a coalition of Technical Partners who have long-standing experience and expertise on-the-ground in Azerbaijan, thereby enhancing coherence and complementarity. Technical Partners will be sub-contracted by UNEP in its capacity as EE, in line with UNEP's procedures and policies. Technical Partners will include the Danish Hydraulic Institute (DHI) (through the UNEP-DHI Centre on Water and Environment), the Finnish Meteorological Institute (FMI), the International Centre for Theoretical Physics (ICTP), the Regional Environmental Centre for the Caucasus (REC Caucasus) and UNICEF. In line with the priorities of Azerbaijan, Technical Partners will lead or provide support for the implementation of specific interventions that require highly technical or scientific expertise and are in line with their mandates and comparative advantages. Technical Partners will have no discretion in implementing activities, and any discretion, decision-making, and responsibility for delegated activities will always be retained by UNEP as EE.

UNEP in its EE capacity will enter into cooperation agreements – Project Cooperation Agreement (PCA) or UN-to-UN Transfer Agreement, as relevant – with each Technical Partner. The Agreements will establish clear roles and responsibilities for the delivery of specific project activities, the schedule and conditions for installments, the determination of the prevailing fiduciary standards, and the terms and conditions for arbitrations and termination of contract. The Agreements will include specific obligations for the Technical Partners on project delivery, financial management, personnel administration, and reporting, as well as arbitration and liability terms.

Project Steering Committee

The Project Steering Committee (PSC) will be established comprising the NDA and UNEP. It will meet at least once per year and will be co-chaired by the NDA and the AE (UNEP). The PSC will provide high-level oversight and guidance towards achieving project objectives. The PSC is a consensus-based[52] decision-making body within the project governance structure and will provide, review and monitor strategic direction and policy guidance to the project team.

[52] If a consensus cannot be reached within the PSC members, the final decision shall rest with the UNEP co-chair.

Among other functions, the PSC will review and approve the annual workplan and budget and approve the project's annual report as prepared by the PMU. The committee will also provide recommendations on project approaches and participate in discussing general strategies and opportunities for project planning and implementation. This will include ensuring the gender-responsiveness of project implementation and that the Gender Action Plan (Annex 4) is being followed and implemented. The PSC will additionally ensure gender balance and include representatives from women's groups and civil society organisations, which will further help to facilitate gender mainstreaming and ensure that gender needs are reflected in project decision making. The PSC will monitor the achievement of targets in the Gender Action Plan. Secretariat services will be provided by the PMU.

National Partners

National Partners will include the Ministry of Ecology and Natural Resources (NDA) and the National Hydrometeorological Service (NHMS), Ministry of Emergency Situations, Ministry of Labour and Social Protection of the Population, Ministry of Agriculture, Land Reclamation and Water Management OJSC, amongst others. UNEP as EE will engage the National Partners as relevant during project implementation. National Partners will have no discretion in implementing activities, and any discretion, decision-making, and responsibility for delegated activities will always be retained by UNEP as EE.

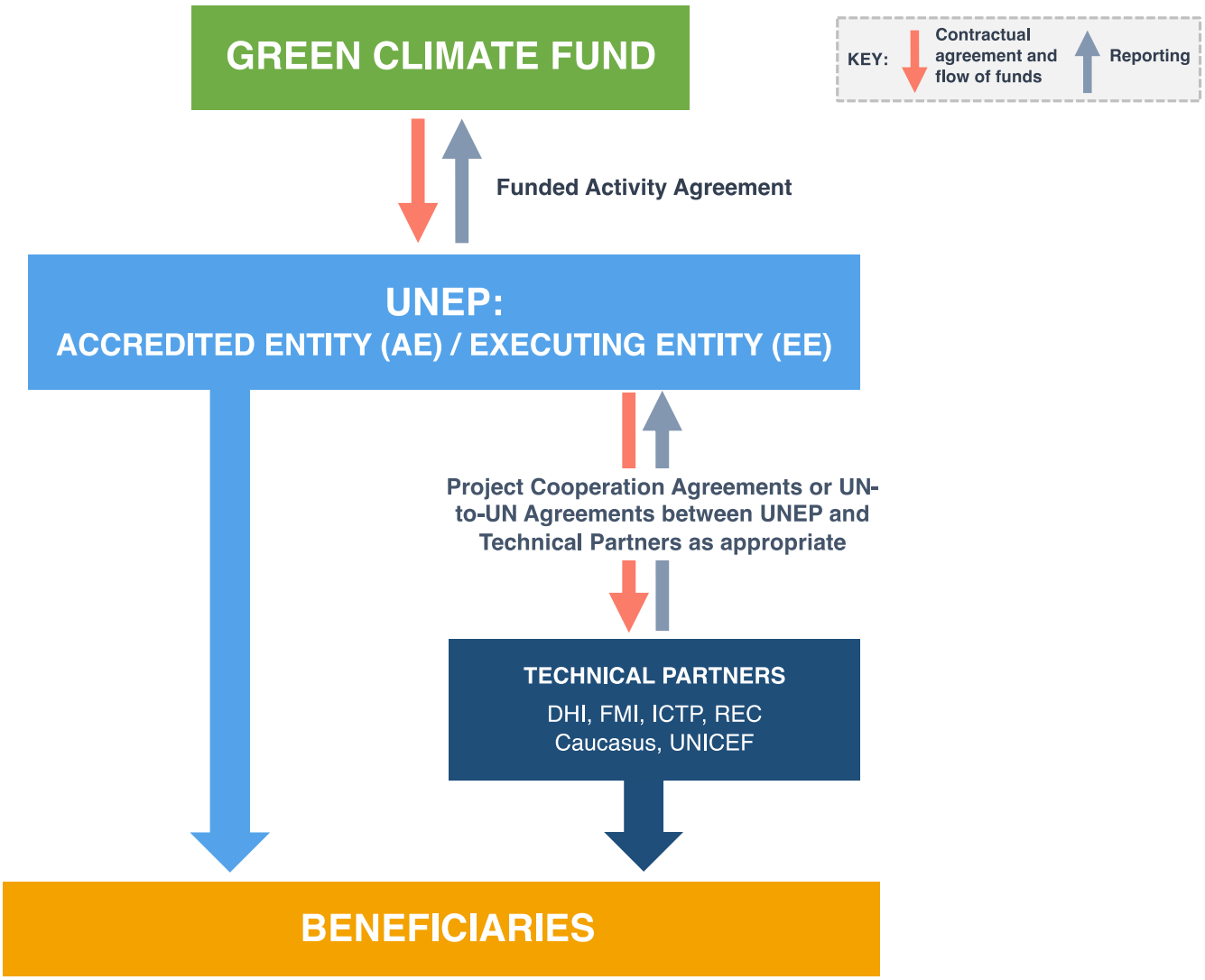

Figure 2. Flow of funds for project implementation. The red arrows indicate the flow of funds while the blue arrows show the contractual arrangements, including the types of contracts between the relevant parties.

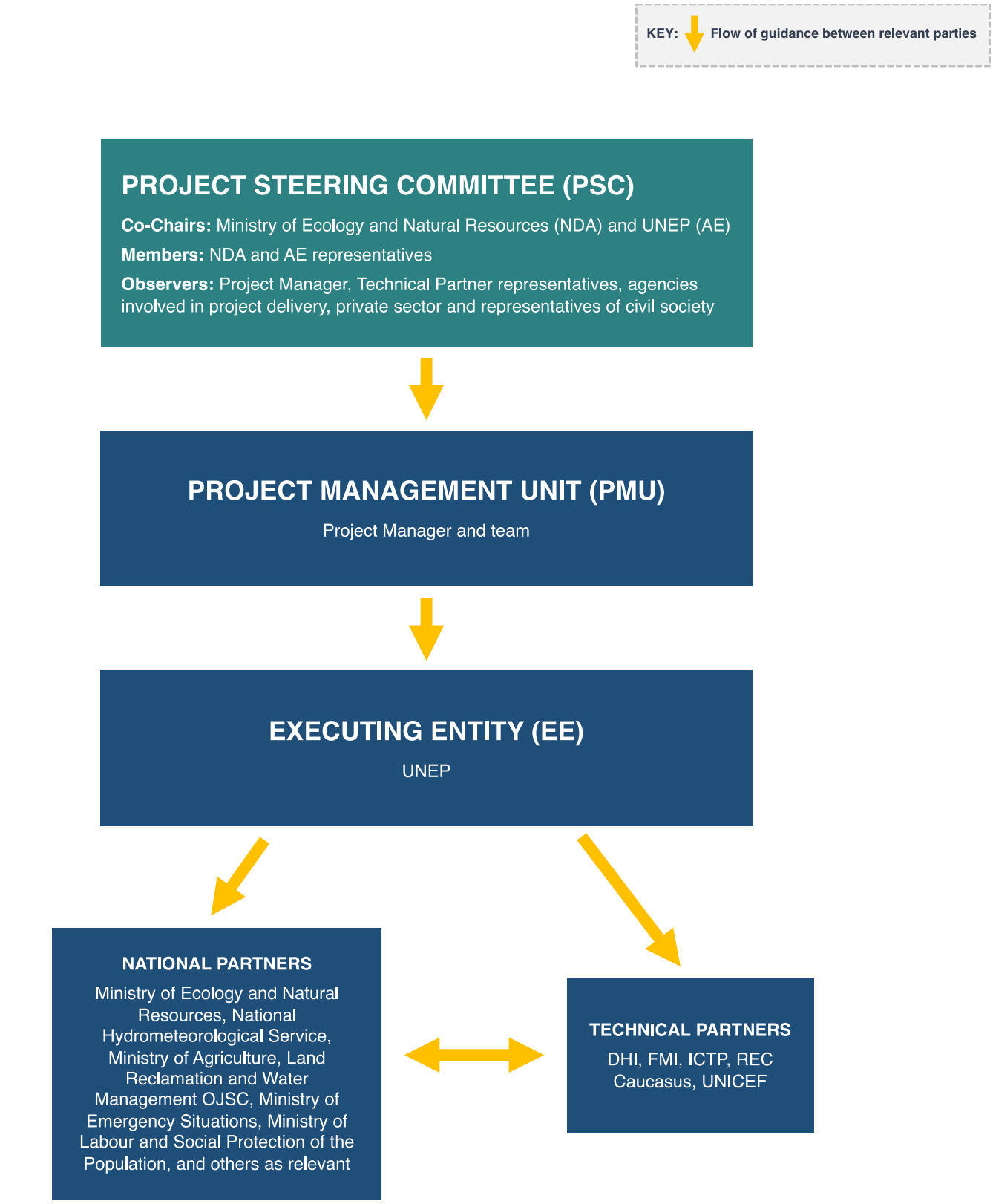

Figure 3. Project governance arrangements. Yellow arrows indicate the flow of guidance between relevant parties.

C. FINANCING INFORMATION

C.1. Total financing

(a) Requested GCF funding (i + ii + iii + iv + v + vi)		Total Amount: 24.99		Currency: million USD ($)	
GCF Financial Instrument		**Amount**	**Currency**	**Tenor & grace**	**Pricing**
(i)	Senior loans	Enter amount	Options	Enter years	Enter %
(ii)	Subordinated loans	Enter amount	Options	Enter years	Enter %
(iii)	Equity	Enter amount	Options		Enter % equity return
(iv)	Guarantees	Enter amount	Options	Enter years	
(v)	Reimbursable grants	Enter amount	Options		
(vi)	Grants	24.99	million USD ($)		

(b) Co-financing information[53]		Total amount		Currency		
		10.1		million USD ($)		
Name of institution	**Financial instrument**	**Amount**	**Currency**	**Tenor & Grace**	**Pricing**	**Seniority**
Government of Azerbaijan	In kind	9.65	million USD ($)	6 years 6 years	Enter %	Options
UNEP	In kind	0.44	million USD ($)	6 years 6 years	Enter %	Options

(c) Total investment (c) = (a)+(b)	Amount	Currency
	35.09	million USD ($)
(d) Co-financing ratio (d) = (b)/(a)	0.40	
(e) Other financing arrangements for the project/programme (max ½ page)	ICTP will provide Parallel Financing to the project under sub-activity 2.1.4 to support capacity development for Internet of Things (IoT) and wireless technologies. The exact amount of financing will be confirmed on an annual basis.	

C.2. Financing by component

Output	Activity	Indicative cost (USD)	GCF financing		Co-financing		
			Amount (USD)	Financial Instrument	Amount (USD)	Financial Instrument	Name of Institutions
1. Strengthened delivery model for climate services and multi-hazard early warning systems	**1.1 Strengthen institutional, policy and financial frameworks for climate services**	$3,395,342	$2,556,092	Grant	$839,250.00	In kind	Government of Azerbaijan
	1.2 Enhance climate data governance and risk knowledge	$2,985,340	$2,785,340	Grant	$200,000.00	In kind	Government of Azerbaijan
Total Output 1		**$6,380,682**	**$5,341,432**		**$1,039,250**		
2. Strengthened observations, monitoring, modelling and prediction of	**2.1 Enhance capacity and equipment for observations and monitoring**	$14,934,694	$7,513,444	Grant	$7,421,250	In kind	Government of Azerbaijan
	2.2 Strengthen weather, water and climate	$5,324,660	$4,743,660	Grant	$581,000	In kind	Government of Azerbaijan

[53] If the co-financing is provided in different currency other than the GCF requested, please provide detailed financing information and a converted figure in the GCF requested currency in the comment box. Please refer to the date when the currency conversion was performed and the reference source.

climate and its impacts	**modelling and impact-based forecasting**						
	2.3 Develop urban climate services for health	$681,000	$618,500	Grant	$62,500	In kind	Government of Azerbaijan
Total Output 2		**$20,940,354**	**$12,875,604**		**$8,064,750**		
3. Establish an impact-based multi-hazard early warning system	**3.1 Establish an impact-based multi-hazard early warning system (MHEWS)**	$1,457,000	$1,107,000	Grant	$350,000	In kind	Government of Azerbaijan
Total Output 3		**$1,457,000**	**$1,107,000**		**$350,000**		
4. Enhanced climate risk management capacity	**4.1 Build capacity to prepare for and respond to climate risks and hazards**	$1,149,025	$949,025	Grant	$200,000	In kind	Government of Azerbaijan
	4.2 Establish Forecast-based Financing (FbF)	$1,024,060	$1,024,060	Grant			
Total Output 4		**$2,173,085**	**$1,973,085**		**$200,000**		
Project Management Costs		$1,613,319	$1,169,520	Grant	$443,799	In kind	UNEP
Monitoring and Evaluation Costs		$1,032,881	$1,032,881	Grant	-		
Contingency		$1,050,000	$1,050,000	Grant	-		
Gender Equality and Social Inclusion		$445,275	$445,275	Grant	-		
Indicative total cost (USD)		**$35,092,597**	**$24,994,797**		**$10,097,799**		

C.3 Capacity Building and Technology development/transfer

C.3.1 Does GCF funding finance Capacity building activities?	Amount: 11,016,693 USD
C.3.2. Does GCF funding finance Technology development/transfer?	Amount: 6,696,694 USD

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

The GCF grant is requested to provide the crucial public good of fit-for-purpose climate information and early warning systems and their application to reduce climate change risks and enhance the resilience of the population of Azerbaijan, which is vulnerable to multiple climate-related hazards. The climate information services and impact-based multi-hazard early warning system (IB-MHEWS) to be developed and strengthened under this project are expected to benefit almost the entire population of Azerbaijan, empowering individuals, sectors and communities to increase their resilience and reduce their vulnerability to climate change and climate-related hazards.

The proposed project interventions are fully in line with the GCF mandate and its strategic guidance on Climate Information and Early Warning Systems (CIEWS), as well as key international agreements and priorities such as the **Paris Agreement** 7(c), which calls for *"Strengthening scientific knowledge on climate, including research, systematic observation of the climate system, and early warning systems, in a manner that informs climate services and supports decision-making"*, and the **Early Warnings for All** initiative called for by the UN Secretary-General António Guterres. Moreover, the proposed project directly responds to the collective commitment of the **Alliance for Hydromet Development** to *scale up and unite efforts to close the hydromet capacity gap by 2030,* of which both the GCF and UNEP are founding members.

Azerbaijan is a developing nation with an economy highly vulnerable to external shocks. Public sector financing for this project is warranted for several reasons. Climate information and early warning systems are public goods. Access to these services cannot be easily excluded from those not willing – or able – to pay for them, and the cost of denying services is likely to increase damages and may indeed increase public sector response costs. Reliable information based on historical experience is needed to enable hazard risk to be priced appropriately. Accordingly, the project intends to foster private sector interest in such markets over time, as weather, water and climate information becomes more reliable.

Whilst it is noted that Azerbaijan has received support from other donors to strengthen its hydrometeorological observation and monitoring system, the support received, and the current availability of further donor and bilateral support is not sufficient for delivering IB-MHEWS at the scale required. The requested grant funding is therefore essential to scale up, systematise and institutionalise existing efforts.

The GCF is best positioned to provide the grant funding required to fill critical technical, infrastructural and financial gaps in the current system in Azerbaijan so that it can effectively deal with the rising challenges and pressures brought about by increasing climate variability and change. As outlined in the gaps and needs assessment presented in the Pre-Feasibility Study (Section 9), the existing hydrometeorological observation network in Azerbaijan is insufficient to provide the high-quality data and information required for risk mapping, modelling, and forecasting due to its poor condition, limited coverage, lack of data management, and overall limited technical capacities. GCF support will provide added value through holistic investment and comprehensive capacity building across the entire climate services value chain. Without such investment, decision-making, planning and future investments will continue to be (mis)-informed by sub-optimal climate data, information, and knowledge.

The general population of Azerbaijan is not in a position to pay for climate information services at the present time and so cost recovery for these essential services to the public is not currently practicable. Since leveraging public and private finance for a public good of this nature can be challenging, the project includes dedicated interventions – particularly through Output 1 – for integrating climate information services in national policies, plans and budgeting. The project will also strengthen and extend the hydrometeorological observation network to provide a foundation of high-quality data. This data will be valuable to future development partners in planning adaptation activities and avoiding maladaptation.

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

The project is designed to address existing root causes and barriers to sustainable climate information services and impact-based multi-hazard early warning systems (IB-MHEWS) in Azerbaijan. In particular, the following are key elements of the exit strategy to ensure sustainability beyond the project's lifespan:

- **Long-term ownership:** The project is demand-led and based on national needs and priorities. Fostering strong country ownership is an important pre-condition for long-term sustainability. Project activities have been developed in consultation with key national stakeholders and potential users of climate information and IB-MHEWS. The close engagement in the design process of the NHMS and other agencies with significant interest in the project, and their continued engagement throughout the implementation period, will facilitate that they continue to be invested in the project's success. At the government level, ensuring ownership of the financial strategy and business model for sustainable climate services and the climate shock-responsive social protection system (SRSP) will be an important focus of the project implementation. In terms of facilitating strong government ownership of SRSP, several key political economy considerations have been factored into the design of Activity 4.2: i) Involvement of the Ministry of Labour and Social Protection of the Population (MLSP) as a principal stakeholder, building on existing engagement by UNICEF as the technical partner supporting SRSP; ii) Involvement of the NHMS as the mandated authority for hydrometeorological information and forecasting in Azerbaijan; iii) Engagement and coordination of multiple stakeholders (including MLSP and NHMS) to mobilise a collective effort in implementing the common agenda of establishing climate-SRSP in Azerbaijan; and iv) Development of climate-SRSP through an iterative and stepwise process with adequate allocation of resources over the six-year project implementation period.
- The project will **strengthen and leverage existing capacities for climate information and early warning systems** rather than creating new parallel structures and processes. Sustainability will be supported by the establishment a holistic national framework with associated institutional coordination mechanism to ensure effective governance, coordination and management of national climate services. The integration of climate services in key policies, strategies, plans and budgets supported by the proposed project will provide a foundation for uptake of climate information in decision-making and facilitate sustainable service provision in the long term. The identification of innovative financing solutions and enhanced resource mobilisation opportunities for climate services and IB-MHEWS through development of a dedicated financial strategy and ongoing private sector engagement will further contribute to sustainability. In addition, the Finnish Meteorological Institute (FMI) has facilitated a preliminary agreement of cooperation between the NHMS and an Azeri University with expertise in computing and IT, which is expected to be an important success factor towards sustainability of local Numerical Weather Prediction (NWP) efforts.

- The project adopts an **inclusive multi-stakeholder approach**, engaging with different ministries, agencies, the National Academy of Sciences, NGOs, private sector actors, and communities, representing both producers and users of climate information and early warnings. Through capacity development activities, awareness-raising and outreach, the project will ensure meaningful engagement and participation of a broad range of stakeholders, as a means to build capacity and enhance buy-in. Local stakeholders' buy-in increases the likelihood that project activities and outcomes will be sustained beyond the implementation period. Moreover, recognising the potential for children and youth to be powerful agents of change, the project includes dedicated interventions to facilitate engagement of young people in MHEWS at multiple levels – in families, with peers, at school, in communities, and at the national level. This includes targeting older adolescents and youth through practical, community-based experiences (UPSHIFT programme[54]) that promote innovative and results-based thinking approaches to climate resilience-building. Engaging youth in practical climate resilience initiatives through UPSHIFT aims to foster a sense of ownership and responsibility towards their communities, creating a generation of climate-conscious leaders who can drive community-based resilience initiatives in the longer term. Additionally, the project targets younger children through formal education, which is an important factor in building a culture of preparedness in the next generation.
- The project's **holistic approach** to strengthening climate services is more likely to lead to sustainability than a focus on the provision of technical infrastructure alone as many other projects have tended to do. The project aims to significantly enhance the capacities of local stakeholders, such that in-country capacity is established for continued operation and maintenance of the systems established, beyond the term of the project. Furthermore, the project will establish integrated platforms and frameworks to facilitate cross sectoral collaboration and long-term sustainability including the National Framework for Climate Services, User Interface Platform (including National Climate Outlook Forums – NCOFs), Integrated Urban Services Framework, and a national financial strategy for sustainable climate services.
- The project will strengthen the **Quality Management System (QMS)** in NHMS, covering the total value chain of climate services (institutional, operational infrastructure, human resources, systems, and processes). The project will also co-develop a comprehensive plan for **Operation and Maintenance (O&M)**, which will outline how specific O&M needs will be addressed both during and post implementation of the project. NHMS has assumed responsibility for sustaining O&M beyond the project for a period of up to 20 years. In addition, as a Technical Partner in the project, UNEP-DHI has committed to providing continued support to NHMS for at least five years after the project closure. Such support will include troubleshooting, back-up support, and other guidance relating to the technical operations and enhancement of hydrological decision support systems.

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

Financial management and procurement within the project will be guided by UN financial regulations, rules and practices, as well as UNEP's Programme Manual. The financial rules of UNEP, which follow International Public Sector Accounting Standards (IPSAS), are promulgated pursuant to the Financial Regulations and Rules of the UN. Within this context, funding allocation mechanisms are managed in accordance with UN rules and procedures, including eligibility criteria, proposal evaluation processes, quality assurance and control, project monitoring and supervision. UNEP is audited annually by the UN Board of Auditors and has established dedicated trust funds for Green Climate Fund resources.

In line with UNEP reporting procedures, the Technical Partners (TPs) who are non-UN entities will submit quarterly financial reports, and the UN Entity Partners will submit semi-annual financial reports to UNEP. UNEP will conduct project supervision, in line with reporting standards and methodologies applied in past projects, such as GCF-funded initiatives FP147 and FP171.

In compliance with UN financial regulations and rules, segregation of duties and safeguards will be ensured. All procurement will be undertaken in line with UN procurement regulations, rules and policies. UNEP's modality for project implementation in the case of a national project results in funds being transferred in tranches to the TPs once the TP has satisfied the conditions that are defined under the relevant legal instrument (Project Cooperation Agreement(s) – PCAs or UN-to-UN Transfer Agreements) to be signed between UNEP and the TPs. The PCAs and UN-to-UN Transfer Agreements will include specific obligations for the TPs on financial management and reporting and will require period ic reporting from the TPs to follow international financial and auditing standards. The PCAs specifically require annual

[54] UPSHIFT is a social innovation and social entrepreneurship programme of UNICEF that empowers disadvantaged youth by providing them with the skills and resources needed to identify and deal with local community issues – in this case, focusing on the impacts of climate change.

audits to be undertaken by a recognised firm of certified public accountants or, for governments, by a government auditor. This auditor should state whether the GCF proceeds were covered by the scope of the audit.

D. EXPECTED PERFORMANCE AGAINST INVESTMENT CRITERIA

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

The project will directly contribute to **increased resilience** of the most vulnerable people and communities (GCF Core indicator 1), health and well-being, and food and water security in Azerbaijan (GCF Core indicator 2). In building capacity for generating, monitoring, analysing and utilising climate science and information; developing new and improved pathways for climate services, tools, and technologies; establishing mechanisms for improved coordination, evidence-based planning and decision making based on robust and sustainable climate information services; and facilitating dissemination of climate information and impact-based multi-hazard early warnings from national to local level the project will contribute to the achievement of additional GCF Core indicators, as follows:

- Strengthening institutional and regulatory frameworks for low-emission climate-resilient development pathways in a country driven manner (Core indicator 5)
- Technology deployment, dissemination, development or transfer and innovation (Core indicator 6)
- Effective knowledge generation and learning processes, and use of good practices, methodologies and standards (Core indicator 8)

The project aims to increase the resilience and reduce the vulnerability of up to 5.71 million direct beneficiaries at high risk from climate-related hazards and extreme events. This constitutes approximately 56 percent of the population of Azerbaijan who are located in areas where the risk of climate hazards is high. In addition, 3.61 million members of the population (36 percent) are expected to be indirect beneficiaries of the project. Hence, the total number of direct and indirect beneficiaries is expected to represent 92 percent of the total population of Azerbaijan, which stands to benefit from nationwide climate services and a people-centred impact-based multi-hazard early warning system (IB-MHEWS), complemented by enhancing preparedness capabilities from national to local level to protect lives, livelihoods, ecosystems, and assets in response to climate-related hazards. The methodology for calculating project beneficiaries is presented in Section 16.3 of the Pre-Feasibility Study (Annex 2).

At the sectoral level, the project interventions are expected to deliver transformative impact in key climate-sensitive sectors through the following means:

- **Agriculture and food security:** Increased availability of weather, water, and climate information can support farming communities to better anticipate, prepare for and respond to agriculture or food security risks, on both short and longer time scales.
- **Energy:** Localised and tailored weather, climate, and air quality information (historical and projected) are required to inform the design, construction, operation and maintenance of energy systems infrastructure, as well as to assess and mitigate the impacts of energy systems on the surrounding environment, public health, and ecosystems and biodiversity. Such information also facilitates more efficient use of generated energy through integration into supply and demand forecasts, for optimal balancing of supply and demand.
- **Health:** Relevant and timely weather and climate information can support improved understanding of the impact of climate conditions on disease transmission and occurrence, contributing to improved estimation of populations at risk, and necessary timing of interventions and investments. It can also support monitoring and prediction of inter-annual variations in disease incidence, as well as longer term trends of potential impacts.
- **Water Resources:** Increased availability of weather, water and climate information underpins science-based decision making for improved water resource management and planning, including through: identification of extreme weather and climate hazards that pose water-related risks; identification of vulnerable populations; allocation and re-allocation of water resources; design and siting of water sector infrastructure and personnel; development and implementation of relevant policies and regulations, and flood management strategies.

Modernised hydrometeorological services are expected to enhance the productivity of key weather-sensitive sectors (i.e., agriculture, construction, energy, transport, and water resources) in numerous ways. In Azerbaijan, four of these five weather-sensitive sectors have contributed between 20 and 25 percent of the national GDP in the last five years.

Applying the conservative 0.1–1% estimate from Hallegatte 2012[55] of value added by weather-sensitive sectors of Azerbaijan yields annual benefits in increased production of USD 12–120 million per year. Assuming that half of these potential benefits are already realised by stakeholders using current hydromet services, the net value added of improving these services would be USD 6 million per year.

Strengthening Azerbaijan's National Hydrometeorological Service (NHMS) with infrastructure, tools and institutional effectiveness will enable NHMS to provide reliable impact-based forecasts and targeted, actionable climate information products. Investments in ICT infrastructure and associated technical capacity development will enable NHMS to increase efficiency and analytics capabilities for delivering high-impact climate information and early warning systems. In addition, the project will equip the NHMS to effectively function as a reliable hazard monitoring and warning service as part of a people-centred IB-MHEWS. Moreover, the project will enhance the capacities of a range of stakeholders to access and use climate information to inform decision-making and actions for more resilient and sustainable development in Azerbaijan.

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

The goal of the project is to catalyse a paradigm shift by establishing capacity in Azerbaijan to make available reliable climate information services and an end-to-end, people-centred, impact-based multi-hazard early warning system (MHEWS), which in turn facilitate that policies, decision-making, preparedness and early action are informed by relevant, science-based information and effective communication of timely risk warnings. The longer-term transformative impact will be that climate-sensitive sectors and communities – especially women, youth, and children – will be more resilient to climate change impacts, because their capacity to reduce disaster risks and avert or minimise climate-related losses and damages will be increased.

Potential for scaling up and replication

The project will introduce transformative technology applications and approaches to data management, visualisation, and communication that are all scalable and replicable to other applications both within Azerbaijan as well as more broadly in the Caucasus and beyond. Supporting NHMS's compliance with WMO standards will have a transformative impact on managing climate and weather risks in in Azerbaijan. The project will also facilitate a better understanding of long-term climate change impacts. This will have a high potential for being scaled up, facilitated through existing regional cooperation mechanisms. Replication will be facilitated through tailoring the collection of hydrometeorological data to address key climate change threats and tailoring the analysis of data and packaging of information to respond the needs of specific end-users at sectoral and community level. Innovations, lessons learned, and good practices in impact-based forecasting, data processes, and observation technology are all transferrable to other applications and once training has been provided for users, scaling the approaches, and leveraging them in additional contexts can be effectively achieved. Finally, the project includes specific interventions designed to create an enabling environment for future project applications in climate information and early warning systems (CIEWS) through the national financial strategy for sustainable climate services and associated capacity development.

Potential for knowledge and learning

The project focuses extensively on knowledge management and learning through a number of pathways. Amongst others, building capacity for community MHEWS and drawing upon both traditional and modern scientific climate knowledge will support communities to base their decision making and planning for climate resilience on reliable and timely information and knowledge. In developing collaborative platforms for multi-sectoral coordination on climate action, the project will create pathways for institutional learning and knowledge/innovation sharing, particularly as it relates to mainstreaming climate change considerations. Elaboration of new business models and value chains for climate information services in vulnerable sectors creates substantial potential for new innovation and learning that can be scaled and replicated in other sectors and applications in Azerbaijan and beyond. Expanded weather, water and climate observations, forecasting, and analysis will contribute both to knowledge of climate risks and hazards as well as potential solutions for response. Furthermore, the project will establish a National Climate Outlook Forum and foster partnerships with relevant international/regional initiatives, such as the North Eurasian Climate Outlook Forum (NEACOF) and the Coordinated Regional Climate Downscaling Experiment (CORDEX), with a focus on furthering knowledge transfer and learning. Finally, the project will champion continuous monitoring and improvements, with built-in mechanisms for refining approaches and products based on user feedback and evolving needs and priorities.

[55] Hallegatte, S., 2012. A Cost Effective Solution to Reduce Disaster Losses in Developing Countries: Hydro-meteorological Services, Early Warning, and Evacuation

Contribution to the creation of an enabling environment

The project focuses extensively on multi-sectoral collaboration and partnership building through the establishment of the National Framework for Climate Services, a User Interface Platform for climate services, as well as the development of sector-specific climate analytics. Furthermore, the national financial strategy for sustainable climate services and the Forecast-based Financing mechanism is expected to drive further investment in CIEWS beyond the project's term. An enabling environment for long-term sustainability will be facilitated through the integration of climate services and MHEWS in key policies, strategies, plans, and budgets, which will provide a foundation for uptake of climate information in decision-making and facilitate sustainable service provision in the longer term.

In addition, the project will create an enabling environment for private finance mobilisation as a means to enhance the sustainability of climate services in the long term. The project will engage with the private sector through the following sub-activities: Sub-Activity 1.1.2 will include private sector stakeholders as part of consultations for the development of the National Climate Outlook Forum; Sub-Activity 1.1.3 focuses on the development of a financial strategy for sustainable climate services, including identification of opportunities for public-private partnerships and resourcing opportunities; Sub-Activity 2.2.3 will engage with private sector stakeholders to co-produce tailored climate analytics and information products; Sub-Activity 3.1.1 further works to promote collaboration with the private sector to help improve dissemination channels for climate risk information and early warning communications; and Sub-Activity 4.1.1 will include private sector organisations in capacity development activities for disaster preparedness.

Contribution to the regulatory framework and policies

As above, developing the National Framework for Climate Services, the User Interface Platform, as well as the development of sector-specific climate analytics, will contribute to improving the regulatory environment for climate information and climate early warning in Azerbaijan, particularly by instituting evidence-based climate risk management, and enabling risk-informed policy development and cross-sector collaboration. The project will also develop an Integrated Urban Services Framework and national financial strategy for sustainable climate services, both of which will help guide decision-making and planning for application of CIEWS. Moreover, the project will develop capacity for Forecast-based Financing, enabled by shock-responsive social protection, which can further clarify responsibilities and investment for climate-resilient early action.

Overall contribution to climate-resilient development pathways

Co-production and dissemination of tailored and targeted impact-based forecasts and climate information products underpinning evidence-based planning will enhance climate resilience building and adaptive capacity of Azerbaijan's most vulnerable communities and climate-sensitive sectors to climate-related hazards. More accurate, reliable, and localised climate information will enable resilience planning for critical infrastructure impacted by climate change and climate-related hazards, through embedding tailored and actionable climate risk information into planning, design, construction and management frameworks. Improved climate information services will also enable more efficient and better-informed approaches to preparedness and response to climate variability and extremes. This will not only allow for strengthening long-term resilience but can also be translated into more immediate reduction of climate-induced livelihood and asset damage, if vulnerable sectors and communities are empowered to access and act on early warnings as facilitated by the project.

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

The proposed project will deliver environmental, social and economic co-benefits from avoided human and economic losses and healthier ecosystems and contribute to gender-responsive development – as detailed below. It will support Azerbaijan's aim to move its economy away from the extractive industry with an emphasis on agriculture, tourism and transport[56] – all of which require reliable climate information services and multi-hazard early warning systems (MHEWS) for resilient and sustainable development. The project is aligned with the Paris Agreement and the Sendai Framework for Disaster Risk Reduction and will contribute to achieving several of the Sustainable Development Goals (SDGs), namely SDG 3 – Good Health and Well-being and SDG 13 – Climate Action. It will also directly contribute towards achieving UN Secretary-General António Guterres' goal of *Early Warnings for All (EW4All).*

[56] Forbes, 2016. What Azerbaijan Plans To Do When The Oil Runs Out. Available at: https://www.forbes.com/sites/wadeshepard/2016/12/03/what-azerbaijan-plans-to-do-when-the-oil-runs-out/?sh=724e72203780

Environmental co-benefits

The environmental co-benefits are contingent on driving uptake and utilisation of climate information into specific sectoral planning. Specific environmental benefits are expected from improved ecosystem functions through better spatial planning (thereby improving the natural functions of the floodplains and watersheds within which they are implemented). Other environmental benefits could include reduction in soil erosion and land degradation through the zoning of activities away from high-risk areas as well as improved management. In the longer term, the project will bring about significant environmental benefits by increasing the country's resilience to climate-induced natural disasters and thus, enabling its population to better protect national assets, including environmental assets.

Social co-benefits including health

Social development is an important factor to consider. Losses from natural disasters are usually inflicted disproportionately on the poor and vulnerable in society,[57] which is the result of a combination of factors such as exposure, lack of access to adaptation support, and slower rates of recovery. Climate information services and MHEWS that equitability target the most vulnerable in society can be vital tools in achieving social development.

Social co-benefits of the project include improved public safety in response to impact-based early warnings; better healthcare services for water- and vector-borne diseases facilitated by capacity to predict outbreaks; and improved general well-being with better access to food and freshwater. Furthermore, the project aims to educate the population at all levels on the use of climate information and early warning systems and, in the longer-term, will empower communities with the knowledge to adopt sustainable and climate-resilient livelihood strategies. Public safety from climate information services and people-centred MHEWS is the key social co-benefit, but additional social benefits can be realised through effective mainstreaming of climate information into sectoral planning, particularly in the healthcare sector for weather-sensitive disease monitoring and for food/water security stemming from risk-informed decision-making and management, as well as extreme heat warnings and air quality indicators.

Economic co-benefits

The principal economic co-benefits of the project stem from improved forecasting and early warning information, and climate risk-informed decision-making, planning, preparedness and capacity for early action, which can lead to reduced livelihood and asset losses. Additional economic co-benefits can be realized as specific sectors utilise climate information and analytics in planning and operations (e.g., seasonal climate predictions in agriculture). Improved advisory agricultural bulletins can improve productivity of agricultural systems and protect other economic activities currently at risk from climate-related hazards. The project is expected to yield significant economic benefits both from reduced losses from hydrometeorological hazards, and enhanced productivity of resultant climate risk-informed sectors. The project will support the generation and integration of high-quality climate and weather data, multi-hazard risk information and vulnerability assessments into targeted early warning and decision-support systems to enhance the resilience of businesses and household income generating activities. This will be complemented by capacity building for both communities and national institutions to support effective disaster preparedness for early action. In particular, the introduction of Forecast-based Financing (FbF) will ensure the funding and implementation of pre-planned disaster response actions in Azerbaijan, which has been shown to minimise the damage and loss caused by climate-related hazards and reduce the need for humanitarian assistance in the aftermath.[58] Improved resource management and planning processes are expected to yield economic gains. In particular, short-term and seasonal forecasts facilitate businesses to implement dynamic management actions (e.g., pre-emptive or within-season adjustments to harvesting schedules). Coastal management agencies can use long-term climate projections to develop suitable zoning plans. Thus, businesses that utilise forecasts for information on predicted environmental conditions can increase their potential to reduce costs and increase profits, relative to no forecast.

Gender-responsive development impact

The project will identify the key differentiated needs and vulnerabilities of specific groups, including women, and will utilise these to develop tailored communication products that aim to ensure that there are effective pathways for all members of society to benefit from the climate information services provided. Furthermore, the project will focus its capacity building efforts to support the inclusion of women in technical roles throughout the institutions. In engaging

[57] CRED and UNDRR, 2018. Economic Losses, Poverty & Disasters: 1998-2017
[58] WFP, 2019. Forecast-based Action Factsheet. Available from: https://www.wfp.org/publications/forecast-based-financing-factsheet

with local communities, the project will pay particular attention to meaningful participation of vulnerable groups and particularly women to ensure that gender issues are taken into account. For effective climate and disaster risk management, the project will meaningfully engage women as key stakeholders and ensure their involvement in decisions on the types of solutions that are implemented. Further details on the gender-responsive approach and outcomes for this project are provided in the Gender Assessment and Action Plan (Annex 4).

Sustainable Development Goals (SDGs) and Broader Sustainable Development

The project will contribute to achievement of specific targets and indicators defined under the SDGs and other international agreements, including:

- **SDG 13 – Climate Action:** The driving force behind this project will build capacity for adaptive resiliency of communities in Azerbaijan by improving availability of and access to science-based climate information and early warning systems for enhanced preparedness and response to climate hazards.
- **SDG 3 – Good Health and Well-being:** In enhancing awareness and availability of climate information, as well as establishing multi-hazard early warning systems, the project will contribute to securing improved well-being for climate-vulnerable communities.
- **SDG 5 – Gender Equality:** Through implementing gender-responsive practices in line with Gender Action Plan (Annex 4), the project will contribute to ensuring women's effective participation and equal opportunities to benefit from the strengthening of climate information and early warning systems across Azerbaijan.
- The project also enables outcomes in other SDGs by supporting improved safety and security for communities. Furthermore, in mainstreaming climate change considerations into multi-sectoral decision making and planning, the project will indirectly support resiliency of other SDG outcomes.
- The Paris Agreement, which in Article 7, Sub-paragraph 7(c) calls for "*strengthening scientific knowledge on climate, including research, systematic observation of the climate system and early warning systems, in a manner that informs climate services and supports decision-making*".
- The Sendai Framework for Disaster Risk Reduction 2015–2030, which in paragraph 33 b) stresses that it is important "*To invest in, develop, maintain and strengthen people-centred multi-hazard, multisectoral forecasting and early warning systems, disaster risk and emergency communications mechanisms, social technologies and hazard-monitoring telecommunications systems; develop such systems through a participatory process; tailor them to the needs of users, including social and cultural requirements, in particular gender; promote the application of simple and low-cost early warning equipment and facilities; and broaden release channels for natural disaster early warning information*". Furthermore, the Sendai Framework's Seven Global Targets calls for efforts to "*substantially increase the availability and access to multi-hazard early warning systems and disaster risk information and assessments to the people by 2030*."

The Early Warnings for All initiative formally launched by the UN Secretary-General António Guterres in November 2022, which aims to ensure that *"every person on Earth is protected by early warning systems within five years"*.[59]

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

Azerbaijan is a landlocked developing country (LLDC) vulnerable to a multitude of climate change impacts and climate-related hazards, which affect its people, livelihoods, economy, and natural resources. The country faces significant levels of disaster risk, which are driven strongly by the exposure component of risk.[60] Azerbaijan ranks 66th out of 191 countries on the 2022 INFORM Risk index "Natural Hazard Exposure" dimension.[61] Moreover, the country is positioned 22nd out of 191 countries on the 2022 INFORM Climate Change Risk Index.[62] In its national development concept "Azerbaijan 2020: Look into the Future", the Government of Azerbaijan recognises that climate-related hazards directly affect the economic and social life of the country, and that associated policy development must take into account climate considerations.[49] The proposed project will address the following needs of recipients:

- Needs of populations exposed to climate-related hazards such as heatwaves, floods, droughts and mudflows for timely and relevant information and warnings that will enable them to take appropriate preparedness actions.

[59] WMO, 2022. Early Warnings for All. Available at: https://public.wmo.int/en/earlywarningsforall
[60] The World Bank Group and Asian Development Bank, 2021. Climate Risk Country Profile: Azerbaijan
[61] INFORM Risk, 2022. Available at: https://drmkc.jrc.ec.europa.eu/inform-index/INFORM-Risk
[62] INFORM Climate Change Risk Index, 2022. Available at: https://drmkc.jrc.ec.europa.eu/inform-index/

Particularly vulnerable are those living in poorer and more rural parts of Azerbaijan, who are most at risk from the negative impacts of increasing temperatures, changing precipitation levels, and increased probability of drought. [63] Climate change impacts are expected to slow progress in poverty reduction and adversely impact food security and economic growth, especially in rural areas. However, the increasing urbanisation of Azerbaijan is also adding to the risks associated with disaster events, as urban areas have higher population densities and more concentrated infrastructure. Women and children are also identified among the highest risk groups, which may be compounded by their socio-economic status.

- Needs of weather-sensitive sectors such as agriculture, disaster risk reduction, health, and water resources management for tailored and actionable climate analytics to facilitate climate-resilient decision-making and adaptation planning and avoid costly maladaptation.
- Needs for strengthening institutional, technical and technological capacities to deliver reliable climate information services and a people-centred, impact-based multi-hazard early warning system in line with international best practices. Modernisation of the National Hydrometeorological Service is a key priority of the Government of Azerbaijan, as indicated in its Fourth National Communication to the UNFCCC.

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

The Government of Azerbaijan recognises the impacts that climate change is having on the country and has highlighted this in a number of official plans and reports. For example, the Third National Communication to the UNFCCC[54] highlights a number of sectors which are being affected and will be affected in the future such as Agriculture, Water Resources, Forests, Coastal Areas, Human Health and Tourism; the national water strategy[55] states the priority "Assessment of climate change impacts to water resources and development of relevant adaptation measures"; and the National Development Strategy[56] recognises the importance of flood prediction and identification of vulnerable areas as well as identification of areas at risk of desertification and soil erosion.

The project is listed in Azerbaijan's Draft Country Programme (2021) as the first priority for GCF funding and is fully coherent and aligned with national policies and priorities, including:

- Fourth National Communication (FNC) to the UNFCCC (2021), which highlights modernization of the National Hydrometeorological Service (NHMS) as a priority. Furthermore, the FNC specifically identifies that the proposed project will "support the Government to significantly develop and strengthen climate information services and create a healthy, effective and sustainable multidisciplinary early warning system".
- The national development concept "Azerbaijan 2020: Outlook for the Future", which states that "Zones where emergencies are expected due to floods will be identified and forecasts will be regularly made to be used by relevant organizations." The strategy also highlights the vulnerability of Azerbaijan with respect to desertification and the potential of agriculture to diversify the economy away from the extractive industry, which requires accurate climate information services.
- Third National Communication to the UNFCCC (2015), which quotes the need for the "Development of Early Warning System in order to reduce the damage caused by the hydrometeorological incidents associated with climate change."[58]
- Azerbaijan's Nationally Determined Contribution (NDC),[59] which noted that "In order to reduce vulnerability of Azerbaijan towards climate change impacts, it is considered to develop relevant adaptation measures for decreasing or minimizing the losses that may occur at national, local and community levels per sector."
- Key barriers to adaptation actions identified by Azerbaijan's UNFCCC focal point in a presentation in 2015 (i.e. Information capacity barriers and Uncertainties of available climate change scenarios).[60]
- Recommendations from previous projects, notably the GEF-funded "Integrating climate change risks into water and flood management by vulnerable mountainous communities in the Greater Caucasus region of Azerbaijan", whose Terminal Evaluation recommended that the government and development partners should "continue to invest in a state-of-the-art hydro-meteorological monitoring system in Azerbaijan, in order to increase the

[63] The World Bank Group and Asian Development Bank, 2021. Climate Risk Country Profile: Azerbaijan
[54] Third National Communication to UNFCCC
[55] National Water Strategy of Azerbaijan
[56] Republic of Azerbaijan, 2012. Development Concept "Azerbaijan – 2020: The Vision of the Future"
[58] Third National Communication to UNFCCC
[59] National Determined Contribution of Azerbaijan
[60] Adaptation to Climate Change in Azerbaijan (2015)

coverage and reliability of hydrological and meteorological data collection in the country to support adaptation to climate risks in the future."[61]

- Needs and priorities in the NHMS in the Ministry of Ecology and Natural Resources, which has placed high priority on modernization, automation, digitization and enhancing MHEWS.[62]

Furthermore, the project will contribute to the national implementation of global priorities such as the Paris Agreement and Sustainable Development Goals (especially SDG 13 on urgent action to combat climate change and its impacts and related target 13.1 to "Strengthen resilience and adaptive capacity to climate-related hazards and natural disasters in all countries"). The project is fully aligned with the Paris Agreement, which in Article 7, Sub-paragraph 7(c) calls for "strengthening scientific knowledge on climate, including research, systematic observation of the climate system and early warning systems, in a manner that informs climate services and supports decision-making" and the Sendai Framework for Disaster Risk Reduction 2015 – 2030, which in paragraph 33 b) stresses the need "To invest in, develop, maintain and strengthen people-centred multi-hazard, multisectoral forecasting and early warning systems, disaster risk and emergency communications mechanisms, social technologies and hazard-monitoring telecommunications systems; develop such systems through a participatory process; tailor them to the needs of users, including social and cultural requirements, in particular gender; promote the application of simple and low-cost early warning equipment and facilities; and broaden release channels for natural disaster early warning information."

As described in the Stakeholder Consultations and Engagement Plan (Annex 13), the project was developed following a request from the Azerbaijan UNFCCC focal points and significant stakeholder consultations with Ministry of Ecology and Natural Resources, National Hydrometeorological Service (NHMS), Ministry of Agriculture, State Water Agency, Ministry of Emergency Situations, National Academy of Science, EU Water Initiative+, Water Infrastructure Public Company (OSC), and UNDP in 2018. During development of the full Funding Proposal, additional scoping discussions have been conducted with Azerbaijan's ministries, private sector, and institutions, which confirmed a strong interest in the proposed project, provided positive feedback, and demonstrated a high level of engagement and support.

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$_____
	(g) Public source finance leveraged	US$_____
	(h) Private source finance leveraged	US$_____
	(i) Total Leverage ratio (i = f / b)	_____
	(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)

Concessional finance in the form of a grant is requested to provide the critical public good of fit-for-purpose climate information services and a people-centred, impact-based multi-hazard early warning system covering the entire population of Azerbaijan. The GCF grant will help to fund vital capacity building and institutional strengthening across the climate information and early warning systems (CIEWS) value chain, which will create the *enabling conditions* for a private sector market for CIEWS and enhance the chances of success for future commercial initiatives.

The proposed project will enable sustained generation, access to and use of localised climate information in Azerbaijan, which is essential to institute science-based, risk-informed planning for climate change adaptation and sustainable development. This is a cost-effective alternative to reactive approaches to climate-related hazards that focus on ad-

[61] https://erc.undp.org/evaluation/documents/download/11164
[62] Assessment on Hydrometeorological Service of Azerbaijan (JRC) supplemented with information from stakeholder consultations and Azerbaijan NHD Priorities

hoc recovery and investment in hard infrastructure, and risk expensive maladaptation. The project will significantly enhance the risk knowledge and preparedness capabilities of sectors and communities, as well as contribute to major capacity development of the NHMS. Enhanced risk knowledge will enable proactive responses based on relevant and timely information and reduce the cost of damage to assets and livelihoods.

The project budget has been developed in consultation with national stakeholders and international experts, based on their experiences and lessons learned in the implementation of similar projects. In particular, the project for Azerbaijan uses actualised costs for the GCF-funded project "Scaling-up Multi-Hazard Early Warning System and the Use of Climate Information in Georgia" (FP068) as benchmarking for the current proposal. Cost-efficiency is achieved by targeting key gaps in the CIEWS value chain, as well as by proposing to utilise licence-free, open-source software and lower cost technologies (e.g., satellite remote sensing) where relevant. The project is designed to build on existing networks and strengths in Azerbaijan.

A high expected benefit-cost ratio (BCR) on investments in upgrading and modernising the NHMS can only be achieved with a sizeable and multi-year investment such as the proposed project. This is corroborated amongst others by a 2015 economic assessment report by WMO that indicated that improvements in early warning systems and preparedness make it possible to limit losses from hydrometeorological disasters, which would not be possible without the informed use of constantly improving meteorological, hydrological, social, behavioural and related information. The report further stated that economic studies have consistently generated BCRs of greater than one. For example, upgrading the hydrometeorological system and early warning capacity of developing countries to developed countries' standard can yield BCRs from 4 to 1 to 36 to 1.[64]

Recent studies suggest that implementation of a flood early warning system can reduce mortality rates by 45 percent,[65] depending on the warning time and quality of the forecast. Implementation of a drought early warning system can deliver BCRs in the range of 3:1 to 6:1.[66] A World Bank assessment of hydromet services in Europe and Central Asia found that for each dollar spent on the NHMS, Azerbaijan averts USD 1.50 of economic losses. Moreover, the study estimated that modernisation of the NHMS would have a BCR ranging from 4.3 to 14.4 over a seven-year investment period, indicating significant economic efficiency.[67]

The long-term financial viability of the project activities will be addressed through interventions in Output 1, which will provide a foundation for coordination and utilisation of climate information in institutions and decision-making. Output 1 will develop a long-term financial business model for the provision of reliable climate services beyond the duration of the project including i) goal setting and the development of programmatic strategies for climate resilience; ii) identifying appropriate funding modalities including opportunities for blended financing; iii) management of public-private partnerships; and iv) support mechanisms for climate service project development and implementation.

The project will leverage the specialised knowledge of international technical partners with longstanding in-country experience to ensure that the most effective technologies and best practices for climate services and IB-MHEWS are utilised. Technical partners will deliver targeted training and capacity development in areas that are essential for transformative impact beyond the term of the project, including: i) innovative and cost-efficient technologies for observations, monitoring and prediction, including Internet of Things (IoT) applications; ii) enhancing institutional efficiency and effectiveness through a strengthened Quality Management System (QMS); iii) facilitating the translation of data into action through impact-based forecasting; and iv) instituting innovative approaches to reduce the impact of climate-related disasters through Forecast-based Action (FbA) leveraging shock-responsive social protection as an enabler. The project will ensure that all infrastructure, systems and processes are compliant with WMO and other internationally recognised standards, as relevant.

Expert technical advisory and capacity development to implement a robust QMS within NHMS is expected to deliver significant benefits that far outweigh the initial effort and resources required for its development and implementation. A well-established QMS will enhance efficiency and effectiveness and embed a continuous improvement culture within NHMS. Moreover, it can be used as a "marketing tool" to strengthen credibility of NHMS' budget allocations vis-à-vis those responsible for providing financial support.[68] Moreover, benefits from the IB-MHEWS will be maximised by developing it in parallel to disaster risk management and climate shock-responsive social protection capacity. The

[64] Hallegatte, S., 2012. A cost-effective solution to reduce disaster losses in developing countries and evacuation: Hydro-meteorological services, Early Warning and Evacuation
[65] UNU-INWEH, 2019. Flood Early Warning Systems: A Review of Benefits, Challenges and Prospects
[66] The World Bank, 2018. Assessment of Food Security Early Warning Systems for East and Southern Africa
[67] The World Bank, 2008. Weather and Climate Services in Europe and Central Asia – A Regional Review
[68] WMO, 2013. Guide to the Implementation of a Quality Management System for National Meteorological and Hydrological Services

inclusion of Output 4, which focuses on enhancing climate risk management and preparedness capabilities, is in line with international best practices and is critical to ensure that investments are effective to the last mile.

E. ANNEXES

E.1. Mandatory annexes

☒	Annex 1	NDA No-objection Letter
☒	Annex 2	Pre-Feasibility Study
☒	Annex 2a	Logical Framework
☒	Annex 2b	Implementation Timetable
☒	Annex 3	Budget Plan
☒	Annex 4	Gender Assessment and Action Plan
☒	Annex 5a	Co-Financing Commitment Letter (Azerbaijan)
☒	Annex 5b	Co-Financing Commitment Letter (UNEP Europe Office)
☒	Annex 6	Term Sheet
☒	Annex 7	Risk Assessment and Management
☒	Annex 8	Procurement Plan
☒	Annex 9a	Legal Due Diligence
☒	Annex 9b	Certificate of Internal Approval

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

☒	Annex 5c	Government O&M Commitment Letter
☒	Annex 5d	UNEP-DHI O&M Commitment Letter
☒	Annex 9c	Letter on Implementation Arrangements
☒	Annex 9d	Land Ownership Letter
☒	Annex 13	Summary of Stakeholder Consultations and Stakeholder Engagement Plan
☒	Annex 14	Market Assessment for Climate Services in Azerbaijan
☒	Annex 15	Appendices to Pre-Feasibility Study
☒	Annex 16	Environmental and Social Action Plan

***** Please note that a funding proposal will be considered complete only upon receipt of all the applicable supporting documents. *****

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

AZƏRBAYCAN RESPUBLİKASI EKOLOGİYA VƏ TƏBİİ SƏRVƏTLƏR NAZİRLİYİ

MINISTRY OF ECOLOGY AND NATURAL RESOURCES OF REPUBLIC OF AZERBAIJAN

Az1073 Azərbaycan, Bakı, B.Ağayev Küç. 100A
Tel: (99412) 492-59-07, Faks (99412) 492-59-07

B.Aghayev Str: 100A, Az1073 Baku, Azerbaijan
Tel: (99412) 492-59-07, Fax (99412) 492-59-07

№ 4/1620-01-08

«24» 06 2021 il

The Green Climate Fund ("GCF")

Subject: Funding proposal for the GCF by United Nations Environment Programme (UNEP) regarding Strengthening Climate Information and Multi-Hazard Early Warning Systems for Increased Resilience in Azerbaijan

Dear Madam, Sir,

We refer to the project titled *Strengthening Climate Information and Multi-Hazard Early Warning Systems for Increased Resilience in Azerbaijan* as included in the funding proposal submitted by UNEP to us on 17 June 2021.

The undersigned is the duly authorized representative of the Ministry of Ecology and Natural Resources, the National Designated Authority of Azerbaijan.

Pursuant to GCF decision B.08/10, the content of which we acknowledge to have reviewed, we hereby communicate our no-objection to the project as included in the funding proposal.

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

(a) In its capacity as NDA, the Ministry of Ecology and Natural Resources of the Republic of Azerbaijan, has no-objection to the project as included in the funding proposal;
(b) The project as included in the funding proposal is in conformity with the national priorities, strategies and plans of Azerbaijan;
(c) In accordance with the GCF's environmental and social safeguards, the project as included in the funding proposal is in conformity with relevant national laws and regulations.

We also confirm that our national process for ascertaining no-objection to the project as included in the funding proposal has been duly followed.

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

Sincerely,

Mukhtar Babayev
Minister

Secretariat's assessment of SAP046

Proposal name:	Strengthening Climate Information and Multi-Hazard Early Warning Systems for Increased Resilience in Azerbaijan
Accredited entity:	United Nations Environment Programme
Country:	Azerbaijan
Project/programme size:	Small

1. The Secretariat has assessed this funding proposal against the GCF investment criteria and for 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, and, if considered appropriate, subject to the conditions set out in annex II of document GCF/B.40/02.

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 (optional)
Impact potential	Yes	Azerbaijan, a landlocked developing country in the southern Caucasus, has a population of 10.1 million, with 56% living in urban areas. The country is surrounded by the Caspian Sea and the Greater Caucasus Mountain range. Its extensive network of over 8,000 rivers provides irrigation and hydroelectric power. Its Human Development Index (HDI) value is 0.745, ranking it 91st out of 191 countries and territories. Azerbaijan's climate is diverse, with nine out of eleven Köppen climate zone classifications identified, including semi-arid, temperate, continental, and alpine tundra regions in the

		Greater and Lesser Caucasus and Nakhchivan. Azerbaijan's temperatures are expected to rise faster than the global average, reaching 2.0°C by 2040 under RCP4.5. Heatwave frequency is expected to increase by 20 days and 60 days by the end of the 21st century. Variable rainfall, increased flood frequency, and severe drought are also projected to impact human and natural systems in the country. 2. The project aims to develop a science-based climate information service and a people-centered multi-hazard early warning system for Azerbaijan's government, public and private sectors, and communities. The project will be accomplished through four interconnected project outputs: 1. Strengthened delivery model for climate services and multi-hazard early warning systems (MHEWS) 2. Strengthened observations, monitoring, modelling and prediction of climate and its impacts 3. Enhanced dissemination and communication of climate risk information and multi-hazard early warnings 4. Enhanced climate risk management capacity. The project seeks to support the country to address climate challenges by contributing to the GCF results areas of A.1: Most vulnerable people and communities (50%) and A.2: Health and well-being, and food and water security (50%). It is envisaged to protect up to 92 per cent of the total population of Azerbaijan, including 56 per cent of the country's population who are located in areas with high climate hazard risk (i.e. direct beneficiaries), and an additional 36 per cent of the population who are indirect beneficiaries. The project also has a high potential to deliver transformative impact in key climate-sensitive sectors, including agriculture and food security, energy, health, and water resources, by increasing the availability of information on weather, water, air quality and climate.

		Given the scope of sectors that it aims to provide CIEWS services, the project should consider accounting for contribution to the other adaptation result areas of A.3: Infrastructure and built environment and A.4:Ecosystems and ecosystem services. The project should explore the possibility of undertaking an impact evaluation to ensure the project implementation keeps to its strategic objectives and focus throughout the project lifecycle. It is fully aligned with the United Nations Secretary-General António Guterres flagship "Early Warnings for All initiative" with the vision of ensuring that "every person on Earth is protected by early warning systems within five years". It is therefore recommended that the project ensures that it protects 100% of the population against impact of climate variability and change.
Paradigm shift potential	Yes	The project demonstrates core drivers of paradigm-shift with regards to transformational planning and programming, catalyzing climate innovation and expansion and replication of knowledge. It also lays the foundation for mobilizing finance at scale to support CIEWS investments in the country. It is aligned with the GCF CIEWS paradigm-shifting investment pathways and aims to create science-based information under pathway 1 (modernizing hydromet services) for Impact-Based Multi-Hazard Early Warning Systems (IB-MHEWS) and Forecast-based Action (FbA) under Outputs 3 and 4, aligning with pathway 2 (Multi-Hazard Early Warning Systems and Early Action). It will remove barriers to pathway 3 (CIEWS for infrastructure and resilience financing), particularly regarding climate data, analytics, and forecasting capacity, by creating an enabling environment for CIEWS to strengthen approaches for assessing, avoiding, and reducing risks and adverse impacts of climate-related hazards. The project has high potential to foster a transformation in Azerbaijan towards policies, decision-making, preparedness and early action that are based on relevant, science-based information and effective and timely communication of risk warnings to enhance the capacity of climate-sensitive sectors and communities (especially women, youth and children) to manage disaster risk.

		It also has the potential to transform Azerbaijan's National Hydrometeorological Service into a system that is compliant with World Meteorological Organization (WMO) standards and introduce transformative technology applications and approaches that are scalable and replicable to other areas beyond Azerbaijan. There is also the potential for promoting knowledge and learning about community multi-hazard early warning system (MHEWS) and new business models and value chains for climate information services in vulnerable sectors; creating an enabling environment for a forecast-based financing mechanism for investment in climate information and early warning systems (CIEWS); and making an overall contribution to climate-resilient development pathways.
Sustainable development potential	Yes	The project demonstrates significant environmental, social and economic co-benefits. It has a high potential to contribute to Azerbaijan's effort to achieve sustainable development targets under the Sustainable Development Goal SDG 3 (Good Health and Well-being), SDG 5 (Gender Equality) and SDG 13 (Climate Action). It also aligned with the Sendai Framework for Disaster Risk Reduction 2015–2030, particularly target G. It contributes to the GCF targeted results for 2024-2027 (USP-2). Specifically, T1 (Developing countries directly supported to advance NDC/NAP/LTS implementation), T3 (Climate Information and Early Warning Systems - project would protect every citizen of Azerbaijan with a robust early warning system), T4 (Food systems - promote agro-meteorological information and decision support to transform agricultural practices in the country), T5 (Ecosystems - promote eco-DRR to support ecosystem-based adaptation interventions), T6 (Infrastructure - support the use of CIEWS for infrastructure design, resilience of infrastructure services and communities that use the infrastructure), T7 (Clean Energy – support planning and use of renewable energy sources for development), T9 (Adaptation and Locally-led Action - it would support community-based CIEWS to build resilience of adaptation and locally-led actions) and T11 (National and regional financial institutions - it seeks to support the development of a national resilience financing framework to inform the design of a fund to support CIEWS in Azerbaijan). Flood early warning systems can reduce mortality rates by 45 percent, while drought early warning systems can deliver benefit-cost ratios (BCRs) of 3:1 to 6:1. A World Bank study

		found that Azerbaijan avoids USD 1.50 of economic losses for each dollar spent on hydromet services. The project will assist Azerbaijan in realizing outcomes that directly align with its sustainable development aspirations, including improved ecosystem functions, improved and more secure livelihoods, improved public safety, improved health care services, reduced asset loss and gender-responsive development. The project aims to improve forecasting, early warning information, and climate risk-informed decision-making, leading to reduced livelihood and asset losses. It will support the generation and integration of specialized high-quality climate and weather data into targeted early warning systems, enhancing business resilience and household income generation. The targeted capacity building for communities and national institutions will support effective disaster preparedness. The project also focuses on forecast-based financing, ensuring pre-planned disaster response actions in Azerbaijan. The forecast-based action approach should improved resource management and planning processes, resulting in economic gains, enabling businesses to reduce costs and increase profits. The project has undertaken a market assessment for climate services in Azerbaijan with a focus on innovation, technology, and job creation (Annex 14). An analysis of barriers to multi-sector engagement in climate services which would help develop strategies for revenue generation for cost recovery, operations and maintenance. The project aims to identify and address the needs and vulnerabilities of specific groups, including women, to develop tailored climate information services. It will focus on capacity building, involving women in technical roles, and engaging them in decision-making processes. The project's gender-responsive approach ensures effective climate and disaster risk management. It is also leveraging on the demographic dividends of providing socio-economic empowerment to the youth through partnership with the UNICEF UPSHIFT program. The UPSHIFT program which aims to develop life skills and empower youth to positively impact their communities would support implementation the project. It would create the critical mass of expertise to support and sustain investments in climate change adaptation and disaster resilience.

		It is recommended that the project explore the use of the Readiness programme to further enhance the UPSHIFT initiative with potential to create innovation (digital transformation and resilience financing) to support investments and uptake of CIEWS. This should enable some of the basic e-infrastructure and software tools to be produced locally.
Needs of the recipient	Yes	Azerbaijan, a landlocked developing country, is vulnerable to climate change impacts and hazards, affecting its people, economy, and natural resources. The country ranks 66th on the 2022 INFORM Risk Index and 22nd on the Climate Change Risk Index. The government recognizes climate-related hazards' impact on economic and social life. The project has a high potential to support Azerbaijan in meeting its need to invest in modernizing its hydrometeorological system and service and consequently meet its growing need for strengthening institutional, technical and technological capacities to deliver reliable climate information services and a people-centered, impact-based MHEWS in line with international best practices. In establishing MHEWS and enhancing awareness and availability of climate information, the project will meet the critical need that communities and climate-sensitive sectors in Azerbaijan have for capacity to adapt and become resilient to intensifying heatwaves, floods, droughts and mudflows.
Country ownership	Yes	The project is strongly aligned with all the country's key development and climate action plans and frameworks, including its national development concept "Azerbaijan 2020: Look into the Future", nationally determined contribution as well as commitments embedded in the country's third (2015) and fourth (2021) national communication to the United Nations Framework Convention on Climate Change and the development plans for the National Hydrometeorological Service in the Ministry of Ecology and Natural Resources. The project has been developed with the active leadership of the Government of Azerbaijan and active involvement of other governmental and non-governmental stakeholders.

		It is recommended that the project leverages on the user-interface that would be established under the National Framework for Climate Services to mobilize a broader strategic national multi-sector stakeholder partnership to effectively drive uptake and support project implementation. It could use the national climate outlook forum as a basis to build such a partnership where CIEWS services are co-designed and co-implemented.
Efficiency and effectiveness	Yes	The proposed project aims to achieve a high expected benefit-cost ratio (BCR) on investments in upgrading and modernizing the National Hydrometeorological System (NHMS). This is supported by a 2015 WMO economic assessment report, which suggests that improvements in early warning systems and preparedness can limit losses from hydrometeorological disasters. Studies on economic value of CIEWS consistently generate BCRs of greater than one, with upgrading the hydrometeorological system and early warning capacity of developing countries to developed countries' standards, yielding BCRs from 4 to 1 to 36 to 1. The project fosters a cost-effective approach to enhancing adaptive capacity-building and resilience-building through a WMO value-chain model with best practices at a cost per beneficiary rate of USD 3.2 per person, which is deemed to be reasonable for CIEWS. The project will use international technical partners' expertise to implement effective technologies and best practices for climate services and IB-MHEWS where the knowledge would be transferred to local experts to sustain operations and maintenance of the investments. Capacity would be built in areas like Internet of Things (IoT) applications, Quality Management System (QMS), impact-based forecasting, and Forecast-based Action. This would ensure compliance with WMO and other international standards. There is high potential for the project to deliver an investment that will decrease the cost to the public sector on responding to climate risks, disasters and impacts in future. The project will stimulate a national financial strategy for CIEWS and thus sustainable investments in CIEWS.

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 classified as category C in accordance with the accreditation level of the accredited entity (AE), the GCF Revised Environmental and Social Policy, and the requirements of the simplified approval process. Minimal environmental and social risks and impacts are anticipated from the small-scale construction works associated with the installation of new monitoring stations. An environmental and social action plan (ESAP) has been prepared, which adequately addresses the minimal environmental and social impacts and risks identified. Risks related to sexual exploitation, abuse and harassment (SEAH) are expected to be low and will be avoided by increasing awareness on SEAH risk prevention and by incorporating specific procedures in the project-level grievance redress mechanism. The Project Management Unit will be responsible for the day-to-day implementation of the ESAP, while the United Nations Environment Programme (UNEP) will provide oversight during implementation. Consistent with its categorization, the funding proposal activities are low risk for non-compliance with the Indigenous Peoples Policy.
Gender Policy	Consistent	The AE has provided a gender assessment and action plan and therefore complies with the GCF gender policy. While Azerbaijan has made commitments to gender equality and women's empowerment through its policies and institutions, women continue to face significant barriers, including in climate change mitigation and adaptation. The project is geared towards empowering women and providing them with the tools to utilize climate information and early warning systems (CIEWS). The gender assessment of the Azerbaijan context identified the different threats men and women face during climate-related hazard events. It also emphasized that the decision-making power in households is largely in the hands of men, and women generally have less

		access to mobile phones and other communication technology. Consultations and desk research highlighted critical considerations that the project will work to address, including the differences in decision-making ability, accessibility and usability of information streams, and trust in the information sources. The project aims to enable women to make informed decisions regarding their efforts to mitigate climate change impacts and increase their resilience. It will invest in improving institutional systems, practices, and behaviours to be more responsive to the differentiated needs and priorities of women and men. The gender action plan includes measures to promote the employment of women and ensure that gender-responsive protocols, service delivery, and human resource management practices are implemented. To bridge the gender-related data gap, the plan outlines actions to collect climate and gender-related data, increase women's participation in training and capacity-building initiatives, and design communication strategies through a gender-responsive lens. The plan also embeds skills-building relating to climate services, data management, and risk knowledge, ensuring that multi-hazard impact forecasting tools address gender issues. Furthermore, the project addresses the root causes of women's disadvantaged positions by making provisions such as adjusting meeting times to accommodate women's work and domestic responsibilities, considering mobility, security, and accessibility in venue selection, and providing transport or covering transport costs for participants. The gender action plan outlines activities, indicators and targets for women's participation and benefits, with corresponding timelines and budget. However, it will be reviewed and refined by the gender and social specialist after further stakeholder consultations to better reflect the needs, priorities and opportunities for both women and men.
Risks	Consistent	**Compliance risk (medium risk)** The Secretariat has conducted a comprehensive compliance risk assessment of the project, concluding that inherent risk associated with this project primarily arises from the involvement of multiple counterparties, some of which are undergoing updated due diligence assessments. Additional inherent risks stem from potential political instability in

		the project area (as reported by the AE), which could disrupt implementation, and the complex interplay of various international and regional entities involved in project execution, each with differing governance frameworks. Risks and vulnerabilities identified include gaps in fiduciary management, stemming from certain government procedures that are currently not fully conducive to accessing and managing international funds (as reported by the AE), as well as potential delays in due diligence assessments for certain partners. Furthermore, the project faces vulnerabilities related to political instability, which could impact project delivery. Finally, prohibited practices, such as fraud or misuse of funds, remain a low-probability but medium-impact risk, especially considering the involvement of multiple partners with varying levels of fiduciary capacity. To address these risks, mitigation strategies include due diligence assessments for all technical partners, as well as a strong compliance framework embedded in the legal agreements. These agreements include specific clauses on anti-fraud, anti-corruption, and AML/CFT practices, ensuring strict adherence to international standards. UNEP, as the executing entity, will also implement continuous monitoring mechanisms, including regular audits, compliance checks, and the establishment of a Project Management Unit (PMU) to oversee day-to-day operations. Moreover, active stakeholder engagement and a project steering committee will provide oversight, especially in regions affected by political instability. The residual risk after mitigation is considered low to medium, given the comprehensive nature of the due diligence and monitoring processes. While inherent risks remain, particularly around political instability and the evolving due diligence status of some partners, the established mitigation measures significantly reduce the potential for non-compliance, fraud, or misuse of funds, thus ensuring the project remains aligned with its fiduciary obligations. Sector-specific risk assessments identify vulnerabilities related to political instability, security, and environmental impact. Continuous monitoring and adaptive strategies mitigate these risks effectively and strengthen project resilience.

		The governance framework ensures transparency through clear reporting and accessible project information, fostering informed stakeholder engagement. Grievance redress mechanisms promptly address concerns, promoting trust and inclusivity in decision-making.
Fiduciary	Consistent	In line with United Nations Environment Programme (UNEP) reporting procedures, the EEs and technical partners will submit quarterly financial reports to UNEP. UNEP will conduct project supervision, in line with reporting standards and methodologies applied in past projects. The segregation of duties and safeguards will be ensured in compliance with United Nations financial regulations and rules. All procurement will be undertaken in line with United Nations procurement regulations, rules and policies. UNEP's modality for project implementation in the case of a national project results in funds being transferred in tranches to the EEs once the EE has satisfied the conditions that are defined under the relevant legal instrument (i.e. project cooperation agreements (PCAs)) to be signed between UNEP and the EEs. The PCAs will include specific obligations for the EEs on financial management and reporting and will require periodic reporting from the EEs to follow international financial and auditing standards. The PCAs specifically require annual audits to be undertaken by a recognized firm of certified public accountants or, for governments, by a government auditor. This auditor should state whether the GCF proceeds were covered by the scope of the audit.
Results monitoring and reporting	Consistent	The project's theory of change is strong and identifies well the project results and their logical linkages. The logical framework is also developed based on the theory of change, and relevant core and supplementary Integrated Results Management Framework indicators are chosen to measure the project performance. The beneficiary calculations went through several revisions, and now it is assessed to be aligned with the GCF beneficiary-calculation standards. It is laudable that the AE endeavoured to identify adaptation benefits first, and then derived the number of direct and indirect beneficiaries from them. Considering the wide variety of changes which can be

		brought about by the successful operation of early warning systems, it is important to identify project beneficiaries that are based on adaptation benefits they will be receiving. In this regard, ex-post project beneficiary monitoring needs to be conducted during implementation by applying well-designed methodologies such as surveys of beneficiaries. Lastly, the project refers to the important roles of youth and women in realizing the project results. Therefore, during project monitoring, it should clearly track and report concrete changes which can be brought about by these groups in increasing climate resilience with the multi-hazard early warning systems.
Legal assessment	N/A	The Accreditation Master Agreement was signed with the Accredited Entity on 15 December 2016, and became effective on 20 February 2017, which was amended and restated pursuant to a first amendment and restatement agreement dated 13 July 2023, and which became effective on 2 August 2023 (the "AMA"). The Accredited Entity has provided a legal 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 Azerbaijan ("Azerbaijan"), a country in which GCF is not provided with privileges and immunities. This means that, amongst other things, GCF is not protected against litigation or expropriation in this country, which risks need to be further assessed. The GCF Secretariat provided a draft agreement on privileges and immunities (P&I) and a background note to the Government of Azerbaijan on 11 May 2016. An updated draft agreement on P&I, accompanied by a background note, was further provided on 20 September 2018. The Heads of the Independent Redress Mechanism (IRM) and Independent Integrity Unit (IIU) have both expressed that it would not be legally feasible to undertake their redress activities and/or investigations, as appropriate, in countries where the GCF is not provided with relevant privileges and immunities. Therefore, it is recommended that disbursements by the GCF are made only after the GCF has obtained satisfactory protection against

		litigation and expropriation in the country, or has been provided with appropriate privileges and immunities. To address the matters raised in this section, it is recommended that any approval by the Board is 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.

Independent Technical Advisory Panel's assessment of SAP046

Proposal name:	Strengthening Climate Information and Multi-Hazard Early Warning Systems for Increased Resilience in Azerbaijan
Accredited entity:	United Nations Environment Programme
Country:	Azerbaijan
Project/programme size:	Small

I. Assessment of the independent Technical Advisory Panel

1. The funding proposal "Strengthening Climate Information and Multi-Hazard Early Warning Systems for Increased Resilience in Azerbaijan" is for a small public sector adaptation project in environmental and social safeguards risk category C, under the simplified approval process.[1] The proposal is submitted by the Government of Azerbaijan through the Ministry of Ecology and Natural Resources (MOENR) as the national designated authority (NDA). The United Nations Environment Programme (UNEP) is the accredited entity as well as the executing entity through its Regional Office for Europe.

2. Azerbaijan, a landlocked developing country,[2] is vulnerable to multiple climate-related hazards and disaster risks, both currently and in the future. The country's existing climate information and early warning systems are outdated, and there is limited institutional capacity to deliver and use integrated climate services and early warning systems for decision makers to better prepare for and take timely action to manage climate risks. The costs of inaction are likely to be high, including for climate-sensitive sectors and vulnerable communities.

3. The project aims to increase the resilience and reduce the vulnerability of government, key sectors and communities in Azerbaijan to climate change and climate-related hazards by ensuring the availability of and access to reliable climate information services through a people-centred, impact-based multi-hazard early warning system (MHEWS).

4. The project will be delivered through four outputs as follows:

(a) Output 1: Strengthened delivery model for climate services and multi-hazard early warning systems;

(b) Output 2: Strengthened observations, monitoring, modelling and prediction of climate and its impacts;

(c) Output 3: Enhanced dissemination and communication of climate risk information and multi-hazard early warnings; and

(d) Output 4: Enhanced climate risk management capacity.

[1] The assessment of the independent Technical Advisory Panel is based on the funding proposal and its annexes, as submitted by the national designated authority on 19 July 2024, and takes note of further clarifications received from the accredited entity on 14 August 2024.

[2] Azerbaijan, located in the Caucasus, is bordered by the Caspian Sea and five neighbouring countries: Armenia, Iran (Islamic Republic of), Georgia, Russian Federation and Türkiye.

5. The total cost of USD 35.09 million comprises a request for GCF grant funds of USD 24.99 million, with in-kind contributions of USD 9.65 million from the Government of Azerbaijan and USD 0.44 million from UNEP. There is provision for parallel financing from the International Centre for Theoretical Physics (ICTP) for specific capacity development activities, with exact amounts to be confirmed on an annual basis. The implementation period is 6 years with an overall project lifespan of 10 years.

6. The funding proposal notes that the main national-level partner will be the National Hydrometeorological Service (NHMS) within MOENR. Additional national-level stakeholders include the Ministry of Emergency Situations, the Ministry of Agriculture, the Azerbaijan Land Reclamation and Water Management Open Joint Stock Company and the Ministry of Labor and Social Protection. Technical partners include the Danish Hydraulic Institute (DHI), the Finnish Meteorological Institute, ICTP, the Regional Environmental Centre for the Caucasus and the United Nations Children's Fund. The governance, management and implementation of the proposed project will be through a Project Steering Committee (PSC) with diverse stakeholder representation and a project management unit in Baku.

7. Azerbaijan is a recipient of four GCF readiness support programmes[3] worth USD 3.8 million and is yet to receive project funding.

1.1 Impact potential *Scale: N/A*

8. The proposal outlines Azerbaijan's vulnerability to multiple hazards, including floods, landslides, droughts, extreme temperatures, hailstorms, air pollution and mudflows, further noting that the number of casualties and the direct economic damage caused by these events in the last three decades was 1,500 and USD 300 million respectively.[4] Women and children, particularly the poorest and most marginalized, are disproportionately affected by disasters; communities in mountain areas and coastal zones are vulnerable owing to their exposure to flooding and mudflows; and communities with limited access to social safety nets are vulnerable to climate shocks, with their livelihoods and well-being compromised.

9. Available hydrological and meteorological data spanning 20 and 25 years respectively show trend increases in mean temperatures and heatwave events, changes in annual precipitation patterns and a gradual decline in total rainfall and in surface water resources.

10. Climate models project an increased intensity and frequency of such events. Drawing on Representative Concentration Pathway (RCP) scenarios RCP 4.5 and RCP 8.5, the funding proposal projects that temperatures are likely to increase at a rate above the global average increases. The frequency of heatwave events is shown to increase with both projections. Many regions are water stressed and are expected to become chronically drought-affected owing to climate change, with resultant impacts on the expansion of arid ecosystems and desertification.[5] Air quality is expected to deteriorate with increases in average temperatures and is highlighted as a major source of public health concern in Azerbaijan. The proposal also considers how climate stressors, such as excessive precipitation, can trigger mudflows and landslides with cascading risks of deforestation, erosion and land degradation. The funding proposal also

[3] GCF Readiness and Preparatory Support Project for Azerbaijan; National Adaptation Plan Support Project for adaptation planning and implementation in Azerbaijan; Strengthening country capacities for NDC implementation in the Agriculture and LULUCF Sectors in Azerbaijan; and Gap assessment and action plan for the International Bank of Azerbaijan (IBA) to meet the GCF requirements.

[4] World Bank. 2012. *The Republic of Azerbaijan: Climate Change and Agriculture Country Note*.

[5] Azerbaijan's fourth national communication to the United Nations Framework Convention on Climate Change (2021).

highlights wind hazards and hailstorms but acknowledges the lack of scientific consensus on their links with climate change.

11. The project aims to deliver impacts against two GCF adaptation results areas:

(a) Most vulnerable people and communities (50 per cent of GCF contribution); and

(b) Health and well-being, and food and water security (50 per cent of GCF contribution).

12. In the view of the independent Technical Advisory Panel (iTAP), strengthened climate information and services could also contribute to GCF results areas on built infrastructure and coastal ecosystems

13. The project aims to build compliance with the World Meteorological Organization (WMO) Global Framework for Climate Services (GFCS) in Azerbaijan.[6] Table 16 in annex 2 to the funding proposal summarizes risks to the climate-sensitive sectors of agriculture and food security, public health, water resources, energy and coastal activities (including the oil and gas industry. The funding proposal notes that four of these five weather-sensitive sectors contributed between 20 and 25 percent of the national GDP in the last five years. Timely access to information could help these sectors to improve anticipatory action and resilience to future climate hazards and disasters.

14. Total beneficiaries make up approximately 92 per cent of Azerbaijan's total population of 10.18 million people. This includes 5.71 million direct beneficiaries (56 per cent of the population, with 50 per cent women) located in areas where risks of climate hazards are high. The project also expects to reach 3.61 million indirect beneficiaries (36 per cent of the population, with 50 per cent women).[7] The project will engage 5,000 adolescents and youth in MHEWS activities and disseminate targeted education materials to 10,000 young children. Some 700 female participants will be reached through risk awareness and education programmes.

15. Impact potential is assessed as high.

1.2 Paradigm shift potential *Scale: N/A*

16. The current baseline for Azerbaijan's climate information and early warning systems (CIEWS) is low, and annex 2, table 19, usefully summarizes the situational analysis. NHMS faces several challenges in fulfilling its responsibility for providing timely and accurate weather, climate and water information, forecasts and warnings, and relevant services for the public and key economic sectors in Azerbaijan. Although responsibility for the dissemination of climate information falls to both the Ministry of Emergency Situations and MOENR, there is insufficient capacity and coordination. The population lacks awareness and understanding of climate-related hazards and associated risks, with limited capabilities to take proactive adaptive action. As climate change impacts intensify, it will become increasingly important to strengthen response capabilities oriented towards safeguarding lives, livelihoods, ecosystems and assets.

17. The intended paradigm shift is to move towards risk-informed, evidence-based decision-making, preparedness and early action by establishing reliable climate information services and an end-to-end people-centred impact-based MHEWS in Azerbaijan.

18. The theory of change is well structured, and the four outputs cover the entire value chain for CIEWS, including by facilitating sustained generation of, access to and use of reliable climate information to underpin long-term climate-resilient development. While outputs 1 and

[6] The project is aligned with the five priority sectors of WMO GFCS: agriculture and food security, disaster risk reduction, energy, health and water resources.
[7] Annex 2, section 16.2, provides adequate details on beneficiaries by economic area and district.

2 lay the groundwork for modernized hydrometeorological services in Azerbaijan by facilitating institutional collaboration, strengthening climate data governance, expanding the hydrometeorological network infrastructure, and supporting state-of-the-art weather forecast and early warning production systems that are designed to flexibly meet the needs of multiple stakeholders across sectors, outputs 3 and 4 will deliver tailored and targeted impact-based forecasts and climate information products, enabling vulnerable communities and decision makers to access and act on early warnings. Together, these efforts could help to bring a fundamental change on how climate information services are strengthened in Azerbaijan, helping to minimize climate-induced economic and non-economic losses and damage and enhancing the productivity of climate-sensitive sectors.

19. The development of a national framework for climate services – intended to be delivered by project completion – is designed to bring alignment with WMO GFCS and will be critical to creating the enabling environment for sustainable change. It will serve to strengthen the overarching institutional and policy environment for science-based climate predictions and services and to foster collaboration across government. The proposal also envisages establishing a national climate outlook forum and fostering partnerships with relevant international/regional initiatives to scale up knowledge transfer and learning in the Caucasus region.

20. The development and operationalization of a national financial strategy for sustainable delivery of climate services is yet another important milestone in enabling NHMS to sustain its services and operations. The project will also support business models and value chains for climate information services in vulnerable sectors, including by engaging with the private sector. Additionally, the development of an innovative forecast-based financing (FbF) mechanism – a shock-responsive social protection scheme – is intended to allocate resources for anticipatory action and enable national social protection mechanisms to direct resources in response to climate shocks so that vulnerable groups are benefitted. The project will develop an FbF roadmap and build foundational capacity within the government and the national social protection system, but its implementation remains outside the scope of this project. The iTAP acknowledges the potential of the proposed national financing strategy and the FbF in driving further investment in CIEWS in the longer term and appreciates that details of how this will work in practice are yet to be developed.

21. NHMS consists of central and regional units[8] and there is limited detail on what further institutional changes might be required within NHMS to take on strengthened functional responsibilities, as a climate information provider, or what implications this might have within the current NHMS structure, staffing and overall establishment.

22. The iTAP acknowledges that the project's approach of enabling Azerbaijan's national compliance with WMO GFCS offers significant opportunities to deliver a paradigm shift towards effective management of climate and weather risks in Azerbaijan. The success of the project will depend on political will, the absorptive capacity of NHMS in implementing impact-based MHEWS, the ability of the project to deliver systemic change at scale and to deliver strengthened coordinated action across government agencies on CIEWS, and the responsiveness of communities in taking anticipatory action.

23. The paradigm shift potential is assessed as medium to high.

1.3 Sustainable development potential *Scale: N/A*

[8] NHMS units include the National Environmental Monitoring Department, the National Hydrometeorology Department, the Scientific Research Institute of Hydrometeorology, the Metrology and Standardization Centre and the Environmental Laboratory Centre.

24. The funding proposal highlights the project's contribution to achieving Sustainable Development Goals (SDGs): SDG 13 (Climate action), SDG 3 (Good health and well-being) and SDG 5 (Gender equality). The project aligns well with the Paris Agreement and the Sendai Framework for Disaster Risk Reduction 2015–2030. The project approach is consistent with the United Nations Secretary-General's Early Warnings for All Initiative,[9] which is built on the following four pillars: disaster risk knowledge and management; detection, observation, monitoring, analysis and forecasting; warning dissemination and communication; and preparedness and response capabilities.

25. The funding proposal includes a comprehensive environmental and social management framework (annex 16) and a gender assessment and action plan (annex 4). While the funding proposal lists gender as a co-benefit, it also points to other social co-benefits that could be realised, including improved public safety from better climate information, better healthcare services with improved weather-sensitive disease monitoring, extreme heat warnings, and air quality indicators, and improved general well-being, better food and water security through improved risk-informed decision making.

26. **Environmental co-benefits**: the project has been subjected to an environmental and social screening assessment and is designated as category C (low risk). The timely uptake and use of climate and disaster information could help to protect people, assets and the environment from major hazards. Climate information could also be used to guide sectoral policies and planning – for instance, in managing ecosystems, floodplains and watersheds, and in adopting practices that could help to reduce soil erosion and land degradation.

27. **Social co-benefits** are likely to arise from improved public safety as a result of impact-based early warnings. Improved climate information could inform sectoral planning, particularly in healthcare services for predicting and monitoring water- and vector-borne diseases, as well as extreme heat warnings and air quality indicators. By educating people on the use of CIEWS, the project expects that communities would be empowered to better respond to climate events and to adopt sustainable and climate-resilient livelihoods strategies in the longer term. The linking of the FbF mechanism with social protection measures could help to trigger the release of resources for early actions, while the development of a virtual national registry within the existing data management ecosystem could enhance targeting of FbF at the community and household level. Engaging older adolescents and youth in practical community-based experiences, akin to the United Nations Children's Fund's UPSHIFT[10] approach, could help to create a generation of climate-conscious leaders to promote climate-resilience in the long-term. Involving younger children through formal education could help to build the readiness of the next generation in responding to climate and disaster risks.

28. **Gender co-benefits** could be realized through promoting the participation of women and other vulnerable and/or marginalized groups (including children, youth, persons with disabilities and elderly persons) as a cross-cutting priority during implementation. The iTAP notes with appreciation the inclusion of a dedicated budget of USD 969,775[11] to promote meaningful participation of women and other vulnerable groups during project implementation. The gender action plan outlines actions to tackle constraints to women's participation in decision-making, and to improve the accessibility and usability of information streams, including through tailored communication products and by promoting positive social and gender norms. Targeted stakeholder consultations during the inception phase will further

[9] Launched at the twenty-seventh session of the Conference of the Parties to the United Nations Framework Convention on Climate Change.

[10] A social entrepreneurship programme that empowers disadvantaged youth by providing them with the skills to identify and deal with local community issues, including climate change impacts.

[11] The proposed budget covers cross-cutting GESI activities (USD 455,275) and embedded GESI actions within specific sub-activities (USD 514,500).

identify how to enhance project benefits for women and other traditionally vulnerable or marginalized groups.

29. The gender action plan is aligned with the logical framework and complements the environmental and social safeguards. Gender and social inclusion (GESI) expertise will be embedded within the project management unit. The GESI expert will also be involved in monitoring GESI actions and social safeguards, and in addressing any sexual exploitation, abuse and harassment concerns. The PSC will include representation from women's groups and civil society organizations and will maintain oversight of the implementation of the gender action plan.

30. The project has outlined a socially inclusive approach to implementation for community-level beneficiaries to be equally able to access project resources regardless of ethnic origin. The project proposes to identify the most at-risk populations, delineate disaster-prone areas for targeted observation, monitoring and multi-hazard early warning services, and package information in a way that is usable by target groups.

31. **Economic co-benefits** could be realized from improved forecasting and the use of CIEWS. The timely use of information could help to reduce loss of livelihoods and assets. Better-quality climate and weather data could also enhance productivity of climate-sensitive sectors, notably agriculture, water resources and coastal management, and enhance the resilience of businesses and household income generating activities. The FbF mechanism could help to reduce the economic impacts of climate-related disasters, particularly for vulnerable communities.

32. The sustainable development potential is assessed as high.

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

33. Azerbaijan has a varying topography and diversity of climatic conditions and is vulnerable to current climate change impacts, including floods, droughts, heatwaves and extreme rainfall. Out of 191 countries, Azerbaijan ranks 22nd and 66th respectively on the INFORM Climate Change Risk Index[12] and the Risk index "Natural Hazard Exposure" dimension[13] (2022). The country ranks 80th out of 181 countries on the 2019 Notre Dame Global Adaptation Initiative Index (ND-GAIN) index for "Vulnerability".[14]

34. Azerbaijan is considered a middle-income country,[15] but its economic performance has stalled since 2015, and a significant proportion of the population is socially and economically vulnerable. The economy is insufficiently diversified, and the oil and gas industries are the main economic drivers. The five priority sectors identified in this proposal are highly sensitive to climate change, posing challenges for people, their livelihoods, the economy and the environment.

35. Annex 2 to the funding proposal uses a MHEWS checklist methodology to identify gaps and needs for CIEWS, which are clearly set out in the funding proposal. They include limited knowledge of risk and hazard assessment, incomplete observation and forecasting of weather and climate data, gaps in national capacities for impact-based forecasting models, lack of institutional frameworks for coordinated delivery of CIEWS, lack of decision-support systems

[12] See https://drmkc.jrc.ec.europa.eu/inform-index/INFORM-Climate-Change.
[13] See https://drmkc.jrc.ec.europa.eu/inform-index/INFORM-Risk.
[14] University of Notre Dame, 2022. ND-GAIN Rankings (Scores for 2019). Available at: https://gain.nd.edu/our-work/country-index/rankings/
[15] See GDP per capita (current US$) – Azerbaijan.

for timely action during hazardous events, and limited capacities to produce, use and act on climate information and services.

36. Azerbaijan has received support from international donors to strengthen its hydrometeorological observation and monitoring system. However, the funding proposal deems this to be insufficient for delivering impact-based MHEWS at the scale required. The funding proposal is also complementary to GCF readiness support to the national adaptation plan support project[16] led by the United Nations Development Programme.

37. Needs of the recipient are assessed as high.

1.5 Country ownership *Scale: N/A*

38. The project was developed following a request from the Azerbaijan focal points to the United Nations Framework Convention on Climate Change secretariat and stakeholder consultations with key ministries in Azerbaijan. A no-objection letter from the NDA of Azerbaijan (annex 1), a co-financing commitment letter from the NHMS of MOENR (annex 5a) and a co-financing commitment letter from UNEP (annex 5b) are available.

39. Azerbaijan does not have a national climate strategy and its updated document on nationally determined contributions (2023)[17] notes that climate change policy is reflected in a number of important development priorities and strategies of the Republic of Azerbaijan, recognizing the need for relevant adaptation measures to reduce vulnerability towards climate change impacts and minimize losses at the national and state level across sectors.

40. Official plans and reports reflect the need for improved climate information and systems. Azerbaijan's third national communication[18] to the United Nations Framework Convention on Climate Change (2015) prioritizes the development of early warning systems, while the fourth (2021)[19] not only prioritizes the modernization of its NHMS but also mentions the submission to GCF of the concept note for this proposal. The country's National Development Strategy to 2020 (developed in 2012) also highlights the country's vulnerability to multiple hazards as a long-standing issue.

41. Annex 13 summarizes stakeholder consultations during project design, including with Azerbaijan's ministries, private sector, communities and non-governmental organizations. Strong interest is shown in strengthening CIEWS, with stakeholders demonstrating a high level of engagement and support. Community representatives were also engaged via Khazar University and a community survey was undertaken, covering a sample of remote villages that recently faced a disaster event, with a view to understanding how communities currently respond to disaster events. A virtual validation workshop discussed project design and the four outputs. However, the annex lacks detail on how many women and youth were consulted during these processes to ensure that their voices were represented in project design.

42. A stakeholder engagement plan outlines high-level proposed roles, key issues and engagement strategy for each of the stakeholders during implementation. Apart from the key government agencies, the approach involves civil society organizations, gender organizations and networks, the private sector, other donors, research networks and CIEWS organizations of regional and neighbouring countries. The public and last mile users of climate information will be engaged through focused outreach and marketing, with surveys to capture feedback.

[16] See https://www.adaptation-undp.org/projects/naps-gcf-azerbaijan.
[17] https://unfccc.int/sites/default/files/NDC/2023-10/Second%20NDC_Azerbaijan_ENG_Final%20%281%29.pdf
[18] Available at: https://unfccc.int/resource/docs/natc/azenc3.pdf
[19] Available at https://unfccc.int/sites/default/files/resource/FNC%20report.pdf.

43. The approach of engaging with a coalition of technical partners is useful as it enables the project to leverage highly technical or scientific expertise. Each technical partner will lead or provide support for the implementation of specific interventions that are in line with their mandates and comparative advantages.

44. UNEP will play a central role in project implementation and has confirmed that it will put in place internal arrangements to separate its functions as AE and EE.

45. At the request of the NDA, UNEP will set up a project management unit in Baku for day-to-day operations and for liaison with technical partners and stakeholders. The proposal does not include details on where the project management unit will be housed but states that UNEP will leverage its institutional arrangements with the United Nations Office for Project Services, enabling it to operate at the country level without necessarily having a country office.

46. The PSC, co-chaired by the NDA and UNEP, allows for national leadership in providing a strategic steer. It is envisaged to meet at least once a year with provision for attendance by observers, including the project manager, technical partner organizations, agencies involved in delivery, the private sector and civil society representatives. The project governance structure clarifies that while the PSC is intended to be a consensus-building decision-making body, the final decision rests with the UNEP co-Chair if consensus cannot be reached. In iTAP's view it will be important for the project to iron out the details and seek confirmation of the PSC working arrangements with the NDA. The project could also further clarify the involvement of all relevant government ministries and institutional coordination arrangements, which will be important in delivering a coherent project.

47. Overall, country ownership is assessed as high.

1.6 Efficiency and effectiveness *Scale: N/A*

48. The co-finance ratio is 1:0.40, with provision for an unspecified amount of parallel financing from ICTP for capacity development (sub-activity 2.1.4). The budget is based on actualized costs for another GCF-funded project,[20] with a majority of GCF resources allocated to output 2 (52 per cent), and the balance across output 1 (21 per cent), output 3 (4 per cent), output 4 (8 per cent) and project management, gender expertise and monitoring and evaluation (M&E) (15 per cent).

49. The funding proposal refers to similar work elsewhere and emphasizes the considerable economic benefits from upgrading hydrometeorological services, estimated at 60 per cent effective in reducing loss of life from floods and 20 per cent effective in the case of drought.

50. The national financial plan will be an important aspect of determining financial sustainability. While the NHMS is mandated to provide both paid and free services, cost recovery for these essential services to the public is not currently practical. The financial plan proposes to adopt two streams: basic "public good" services to be covered under national budget allocations; and specialized value-added services tailored to specific users in both the public and the private sector, which may offer options for cost recovery in the longer term. Annex 14 also identifies means to create an enabling environment for engaging the private sector and for mobilizing private finance, currently at a low baseline, in climate services in Azerbaijan.

51. The overall project lifespan is presented as 10 years in line with considerations on the estimated lifespan of equipment. This time frame also assumes that project interventions would be fully integrated within the government's broader national framework for climate services. A

[20] "Scaling-up Multi-Hazard Early Warning System and the Use of Climate Information in Georgia" (FP068).

letter of commitment confirms that the NHMS will ensure the operation and maintenance of equipment for up to 20 years and will sustain functions of local consultancy related to hydrometeorology and climate services beyond the project implementation period. UNEP has also made a commitment that the UNEP-DHI Centre on Water and Environment will provide support to Azerbaijan's national institutions on operation and maintenance for hydrological information and decision support systems for at least five years after project closure.

52. While other donors have provided support to Azerbaijan to strengthen its hydrometeorological observation and monitoring system, GCF resources will bring added value by working holistically across the entire climate services value chain, by helping to institutionalize and scale up efforts across the system and by supporting evidence-based policy, planning and early action. The annexes to the funding proposal also outline how the project is aligned with past and ongoing CIEWS initiatives in Azerbaijan and proposes to draw on emerging lessons.

53. The M&E arrangements are outlined and include an M&E Advisor and provide for training on data collection and analysis for executing entities and technical partners. The logical framework (annex 2a) could be strengthened: (i) baseline and target values are not presented for all indicators – for example, it is unclear how many people will be trained on the use of the new impact-based MHEWS system (output 2) or how many people will be reached through targeted capacity-building at the community level (output 3); (ii) outlining the key stakeholder group and technical partner alongside the outputs will be important as multiple partners are involved in implementation – for instance, in urban climate services for health (output 2) and in the performance-based forecasting (output 4). Output 3 focuses on communication and dissemination of information, and the M&E could consider means to track the extent to which communities are responsive to using climate information and services, and seek to understand whether services (e.g. tailored agrometeorological services for farmers) meet user needs and willingness to pay.

54. The efficiency and effectiveness potential is assessed as medium to high.

II. Overall remarks from the independent Technical Advisory Panel

55. This funding proposal could potentially be among the first set of GCF projects for Azerbaijan. The iTAP finds that project design aligns well with international best practice and WMO standards. The iTAP also takes note of the external risks, as highlighted by the funding proposal (annex 2, table 2), which include political, economic, sociocultural, legal and environmental factors in Azerbaijan that could impact project delivery and sustainability. These issues will need to be effectively managed by the project and the PSC as they emerge.

56. The iTAP recommends that the accredited entity undertake the following:

(a) During project inception

  (i) Detail out the institutional coordination arrangements of the PSC, of all the government ministries involved, and of the technical partners across implementation of all outputs, which is essential to delivering a coherent project (see para. 46 above);

  (ii) Strengthen the overall logical framework by establishing baseline and target values, by adding responsible partners for associated activities, and by considering ways to assess the use of climate information and services (see para. 53 above).

(b) By project mid-term

(i) Clarify how the FbF approach will work in practice, including how relevant departments will be involved in decision-making and processes for fund release and management (see para. 20 above);

(ii) Ensure that the national financing strategy clearly articulates a resourcing plan to ensure financial sustainability beyond GCF funding, and that this is well aligned with the national framework for climate services and ongoing project activities (see paras. 21 and 50 above); and

(iii) Develop a clear plan for institutional capacity and technical expertise within the NHMS and all associated departments/agencies, which will be important for long-term sustainability (see para. 21 above).

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

Response from the accredited entity to the independent Technical Advisory Panel's assessment (SAP046)

Proposal name:	Strengthening Climate Information and Multi-Hazard Early Warning Systems for Increased Resilience in Azerbaijan
Accredited entity:	United Nations Environment Programme
Country:	Azerbaijan
Project/programme size:	Small

Impact potential
UNEP welcomes iTAP's assessment that the impact potential of the project is high, which reflects the project's intention to enhance the resilience of 10.2 million people (approx. 92 per cent of Azerbaijan's population), underpinned by the establishment of nationwide climate services and an end-to-end people-centred impact-based multi-hazard early warning system. UNEP takes note of the iTAP's view that strengthened climate information and services could also contribute to the GCF results areas on built infrastructure and coastal ecosystems (ARA 3 and 4). While we consider that access to reliable climate information is critical to increase the resilience of these sectors to climate-related hazards, it should be noted that the project does not include activities that directly target adaptation of the built environment or ecosystems. As such, the ARA 3 and 4 results areas are not specified in the funding proposal.
Paradigm shift potential
UNEP thanks the iTAP for the positive assessment of the project's paradigm shift potential. We appreciate that the success of the project will depend on several factors, as highlighted by the iTAP, and will monitor progress against these factors during the project implementation. Nonetheless, we are confident that these success factors have been sufficiently addressed in the project design and development process. For example, the proposed National Framework for Climate Services (NFCS) and associated User Interface Platform are expected to facilitate large-scale systemic change in the delivery of sustainable, user-driven climate services; while meaningful and targeted engagement of local communities (including women, children and youth) to build capacity and enhance buy-in is expected to increase their responsiveness in taking anticipatory action. Moreover, Azerbaijan has demonstrated strong political will for action on climate change, exemplified by its leadership as the COP29 Presidency.
Sustainable development potential
UNEP agrees that the sustainable development potential of the project is high. We particularly appreciate the iTAP's positive recognition of the project's dedicated budget to implement measures to promote full and meaningful participation of women and other vulnerable and/or marginalised groups. This will help to ensure that sufficient resources are available to support gender equality and social inclusion as a cross-cutting priority.
Needs of the recipient

UNEP agrees that the needs of Azerbaijan regarding the provision of climate information and early warning systems are high. These needs are exacerbated by the diversity of climatic conditions in the country, which render the population exposed and vulnerable to a multitude of climate-related hazards, underlining the importance of a multi-hazard approach, as proposed by the project.

Country ownership

UNEP welcomes the iTAP's assessment that country ownership for the project is high. The project is fully aligned with national priorities, as reflected in national policies and plans, as well as in local stakeholder consultations. Moreover, the project is recognised as a priority initiative in Azerbaijan's Fourth National Communication to the UNFCCC (2021). UNEP concurs that the Project Steering Committee (PSC), co-chaired by the NDA and UNEP, allows for national leadership in guiding the project implementation. Detailed terms of reference for the PSC will be prepared in consultation with the NDA during the project inception. Regarding institutional coordination, the NFCS to be developed will provide an overarching mechanism for coordinating, facilitating and strengthening collaboration among national institutions for the delivery of user-driven climate services in line with international good practices. The User Interface Platform, a key component of the NFCS, will be established with the specific aim of strengthening interactions and collaboration between the National Hydrometeorological Service (NHMS) and users of climate information and services.

Efficiency and effectiveness

UNEP appreciates and agrees with the iTAP's recognition that the GCF investment will bring added value by working holistically across the entire climate services value chain in Azerbaijan. The project intends to institute a proactive, evidence-based, and risk-informed approach to climate change adaptation and disaster risk management in Azerbaijan. This is a highly cost-effective alternative to reactive approaches to climate-related hazards that focus on *ad-hoc* recovery and risk expensive maladaptation.

Regarding the commitment of the UNEP-DHI Centre on Water and Environment to supporting operation and maintenance of hydrological information and decision support systems beyond the project implementation period, we would like to highlight that a signed commitment letter from UNEP-DHI is provided as Annex 5d.

Overall remarks from the independent Technical Advisory Panel:

UNEP welcomes the iTAP's overall positive assessment of the funding proposal and notes with thanks the recommendation that the Board approves the project. If approved, this would constitute the first GCF full project for Azerbaijan, as well as contribute to closing the financing gap in the GCF's most underserved geographic region.[1]

Additionally, UNEP appreciates the constructive recommendations provided by the iTAP. We are pleased to advise that all recommendations will be addressed as part of the existing project design or inception process, as outlined in the clarifications below:

(a) As noted in the response regarding "Country Ownership", UNEP will prepare a detailed terms of reference for the PSC, which will be agreed upon with the NDA and adopted at the first meeting of the PSC. This is in line with the process undertaken for UNEP's existing GCF-funded initiatives.

[1] As of 28 August 2024, 15 out of a total of 270 GCF-funded projects are in Eastern Europe.

(b) As outlined in Annex 2a (Section 5), UNEP will engage a Monitoring and Evaluation (M&E) Advisor to design a performance monitoring and evaluation framework to track the project's progress towards achieving its targets. In line with the iTAP recommendation, the process of developing the framework will involve the establishment of baseline and target values (where required) and identification of responsible partners for associated activities. Means to assess the use of climate information and services will also be considered and will be reflected in the relevant indicators.

(c) Forecast-based Financing (FbF) is a new and innovative concept for Azerbaijan, with capacity to deliver FbF currently non-existent. The focus of the project is therefore to build foundational capacity within Azerbaijan to implement FbF and work with national stakeholders to identify a pathway for delivering and scaling up FbF. Informed by and building on the development of a Roadmap for FbF and associated capacity building activities, the project will develop a model, triggers and protocols for FbF linked to climate shock-responsive social protection, which will set out in detail how FbF will work in practice. This process will commence in Year 2. By the project mid-term, preliminary details of how the FbF approach will work will be available. However, it should be noted that full details of the approach to FbF will be further elaborated and refined over the full course of the project implementation.

(d) UNEP confirms that the national financial strategy will articulate a resourcing plan to ensure financial sustainability beyond the project implementation period, as per the iTAP's recommendation.

(e) UNEP clarifies that a plan for institutional capacity and technical expertise within the NHMS is already envisioned as part of the development of the NFCS and overall delivery model for the NHMS. As such, no additional effort is needed to comply with this recommendation.

Strengthening Climate Information and Multi-Hazard Early Warning Systems for Increased Resilience in Azerbaijan

Annex 4

Gender Assessment and Action Plan

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1. Introduction

This Gender Assessment and Action Plan (GAAP) has been formulated for the Green Climate Fund (GCF) funding proposal being developed by UN Environment Programme (UNEP), titled: *Strengthening Climate Information and Multi-Hazard Early Warning Systems for increased resilience in Azerbaijan.* The project aims to to significantly upscale and strengthen climate information services and establish a robust, effective and sustainable Multi-Hazard Early Warning System (MHEWS). The latter will facilitate preparedness for early action at the community and national levels and critically enhance resilience against climate-related hazards of the most vulnerable people and communities, thereby contributing to improved well-being, people's health, and food and water security.

The Project Outputs are based on the pillars of Global Framework for Climate Services, a UN-wide initiative coordinated by the World Meteorological Organization (WMO) and consist of the following:

- **Output 1:** Strengthened delivery model for climate information and multi-hazard early warning systems
- **Output 2:** Strengthened observations, monitoring, modelling and prediction of climate and its impacts
- **Output 3:** Enhanced dissemination and communication of climate risk information and multi-hazard early warnings
- **Output 4:** Enhanced climate risk management capacity

Gender Mainstreaming Priorities of GCF and UN Environment Programme

The GAAP has been developed to meet the standards of both GCF's and UNEP's respective gender policies. The GCF adopted a revised version of its 2014 Gender Policy and Action Plan in June 2018.[1] The revised Policy emphasizes gender responsiveness rather than gender sensitivity. Being gender-responsive means that instead of only identifying gender issues or ensuring a "do no harm" approach, a process will substantially help to overcome historical gender biases. This is in line with the language used in UNFCCC decision CP.20 (Lima Work Programme) and the Paris Agreement. The policy also aligns with the United Nations Sustainable Development Goals (SDGs), which make explicit commitments to gender equality both as a stand-alone goal on gender equality and women's empowerment in SDG 5 and as a cross-cutting theme across all the SDGs.

UNEP's Gender Equality and Environment policy recognizes the role of gender equality as a 'driver of sustainable environmental development.'[2] As the lead organization to coordinate environmental matters within the United Nations System, UNEP has the responsibility to drive the achievement of the System's gender equality mandate in its environmental assessments and analyses, norms, guidelines and methods, for use by stakeholders looking for guidance on how to effectively manage the environment for their

[1] GCF/B.20/07: Updated Gender Policy and Action Plan 2018–2020.
https://www.greenclimate.fund/documents/20182/1087995/GCF_B.20_07_-_Updated_Gender_Policy_and_Action_Plan_2018_2020.pdf/9bd48527-6e35-a72a-2f52-fd401d16d358

[2] UN Environment (2015). "Gender Equality and the Environment: Policy and Strategy".
https://wedocs.unep.org/bitstream/handle/20.500.11822/7655/Gender_equality_and_the_environment_Policy_and_strategy-2015Gender_equality_and_the_environment_policy_and_strategy.pdf.pdf?sequence=3&isAllowed=y

sustainable development and economic growth. To that end, UNEP has sought to formalize and bolster agency-wide gender mainstreaming efforts and has the expertise and personnel to support the analytical underpinning of project-level gender mainstreaming during implementation.

Methodology

The Gender Assessment and Action Plan is informed by an extensive desk-review and development of a gender baseline through the following steps:

- The content of this annex draws from a comprehensive desk-review of existing literature was conducted. This included literature on climate change adaptation (CCA), climate information systems (CIS), early warning systems (EWS), disaster risk reduction and management (DRR/M), and hydro-meteorological systems in relation to gender and the context of Azerbaijan.
- Literature was drawn from: research reports from international organisations, multilateral development banks (the World Bank and the Asian Development Bank – ADB); journals (Gender and Development, Journal of Coastal Research, etc.); grey literature (government reports and policies); and through coordination with the Azerbaijan Gender Information Center (AGIC) , an NGO that provides analytical, bibliographical and documentation of women's issues and women's movements in the territory of the South Caucasus.

The Gender Assessment and Action Plan was also informed through stakeholder consultations. Community representatives were engaged via Khazar University and surveys were filled to understand how communities currently respond to disaster events, what type of communication devices they have available and their input on the organization in country that should be responsible for communicating disaster events. These surveys included questions regarding how the needs of vulnerable groups (including women) are addressed when preparing for disaster events. Additionally, a webinar discussion was held with representatives of relevant NGOs from different regions of Azerbaijan regarding the project interventions. In this discussion, NGO representatives outlined the different experiences and vulnerabilities that men and women experience during disaster events. Lastly, the Gender Assessment and Action Plan was reviewed for comment by the AGIC.

2. Baseline and Context

An assessment of the current gender baseline in Azerbaijan was undertaken drawing on existing assessments and research from ADB, UNDP, World Economic Forum, the State Statistical Committee for the Republic of Azerbaijan, and the Azerbaijan Gender Information Center. It should be noted that additional indicators are available in the various publications, but the metrics chosen below are meant to streamline the assessment to support the proposed Climate Information and Early Warning Systems (CIEWS) project.

Population

The population figures for different age groups (men vs. women) for all of the economic regions and sub-regions in Azerbaijan can be seen below. In general, the distribution of men and women is even across the country at about 50% women and 50% men (Table 1).[3]

Table 1: Population by region, age, and gender (demographic numbers in thousands)

Towns and regions	Younger than working age		At working age		Older than working age	
	Women (0-14)	Men (0-14)	Women (15-63,5)	Men (15-63,5)	women (61+)	men (64+)
Republic of Azerbaijan	**1050.1**[4]	**1206.6**	**3398.7**	**3495.8**	**590.3**	**325.6**
Baku city	**218.6**	**247.0**	**783.7**	**805.6**	**149.9**	**88.3**
Absheron economic region - total	**55.5**	**64.2**	**200.9**	**202.7**	**33.6**	**19.6**
Khyzy region	1.9	2.2	5.8	5.8	0.9	0.5
Absheron region	18.1	21.3	76.9	78.9	11.6	7.3
Sumqayit town	35.5	40.7	118.2	118.0	21.1	11.8
Ganja-Gazakh economic region - total	**129.8**	**153.5**	**437.2**	**450.3**	**80.3**	**43.0**
Ganja town	29.1	33.9	120.7	117.1	22.0	12.8
of which:						
Nizami region	14.2	16.3	55.6	53.0	8.6	5.3
Kapaz region	14.9	17.6	65.1	64.1	13.4	7.5
Gazakh region	9.9	11.4	33.2	33.7	6.8	3.4
Agstafa region	9.1	10.5	30.1	30.5	5.6	2.7
Tovuz region	19.4	22.8	57.5	61.3	10.6	5.6
Shamkir region	24.8	29.5	70.8	75.9	12.3	6.2
Gedabey region	9.6	12.0	33.0	35.4	7.2	3.7
Dashkesen region	3.3	4.4	12.0	12.6	2.0	1.1
Samukh region	5.9	6.9	20.1	20.8	3.3	1.8
Goygol region	6.4	7.7	21.7	22.9	3.7	2.2
Goranboy region	11.4	13.2	34.5	36.6	6.1	3.2
Naftalan town	0.9	1.2	3.6	3.5	0.7	0.3
Shaki-Zaqatala economic region - total	**65.4**	**71.8**	**211.2**	**222.0**	**37.1**	**19.2**

[3] State Statistical Committee for the Republic of Azerbaijan "Women and Men in Azerbaijan" (2020); https://www.stat.gov.az/source/gender/?lang=en

[4] All demographic numbers are in thousands.

Balaken region	9.6	10.8	34.5	35.5	5.8	2.9
Zagatala region	12.8	13.8	44.8	46.4	8.0	4.0
Gakh region	5.5	6.0	19.7	19.9	4.0	2.1
Sheki town	19.9	22.0	62.6	66.2	11.5	5.9
Oghuz region	4.9	5.2	14.8	16.0	2.4	1.4
Gabala region	12.7	14.0	34.8	38.0	5.4	2.9
Lankaran economic region - total	**108.2**	**126.9**	**313.2**	**327.5**	**46.4**	**24.5**
Astara region	12.9	14.6	36.0	37.5	5.6	3.1
Lankaran town	24.4	28.3	77.0	80.5	13.1	6.9
Lerik region	10.0	11.9	28.5	29.4	3.8	2.2
Yardymly region	8.6	10.3	21.9	23.1	2.6	1.5
Masally region	25.8	30.8	74.8	79.2	11.4	5.7
Jalilabad region	26.5	31.0	75.0	77.8	9.9	5.1
Guba-Khachmaz economic region - total	**63.7**	**72.8**	**180.7**	**191.0**	**30.6**	**15.9**
Gusar region	10.9	12.5	32.6	34.1	5.9	3.0
Khachmaz region	20.7	23.4	58.9	61.7	10.0	5.1
Guba region	20.0	22.7	55.7	60.4	9.5	5.1
Shabran region	7.1	8.5	19.3	20.4	3.0	1.6
Siyazan region	5.0	5.7	14.2	14.4	2.2	1.1
Aran economic region - total	**230.9**	**262.4**	**684.3**	**706.0**	**106.6**	**56.1**
Geychay region	13.3	15.3	40.6	42.2	6.9	3.4
Beylagan region	11.5	13.7	32.2	34.3	5.2	2.6
Agjabedi region	15.5	18.9	43.6	49.0	6.3	3.5
Barda region	16.8	19.7	51.8	55.9	8.7	4.6
Neftchala region	9.1	10.2	30.2	30.7	5.6	3.1
Bilasuvar region	13.2	15.1	34.3	35.5	4.5	2.5
Salyan region	15.9	18.4	46.0	47.7	7.9	4.0
Yevlakh town	15.4	15.6	45.2	42.4	7.3	3.8
Mingechevir town	10.3	11.5	38.3	35.9	6.5	3.6
Agdash region	12.6	13.4	37.3	39.0	5.9	2.9
Ujar region	10.2	11.6	30.1	30.8	4.5	2.3
Zardab region	6.4	7.2	20.0	20.9	3.1	1.7
Kurdamir region	13.1	15.1	39.5	41.4	5.9	2.9
Imishly region	14.7	17.3	44.1	45.5	6.4	3.4

Saatly region	13.5	14.9	35.3	37.8	5.0	2.6
Sabirabad region	22.2	25.2	58.4	60.6	8.2	4.2
Hajigabul region	9.0	10.1	25.9	25.7	3.9	2.0
Shirvan town	8.2	9.2	31.5	30.7	4.8	3.0
Yukhari Karabakh economic region - total	**63.3**	**74.7**	**238.7**	**233.9**	**49.2**	**27.9**
Jebrayil region	8.1	9.7	29.1	27.9	4.4	2.5
Fizuli region	14.3	16.6	46.6	45.2	7.3	3.8
Agdam region	21.3	25.3	71.7	67.9	11.5	6.3
Terter region	9.6	11.0	33.1	35.6	10.0	5.4
Khojaly region	2.0	2.5	10.1	10.0	2.6	1.6
Shusha region	3.7	4.4	11.4	10.5	2.9	1.8
Khojavend region	2.5	2.9	16.1	16.0	4.1	2.5
Khankendi town	1.8	2.3	20.6	20.8	6.4	4.0
Kalbajar-Lachin economic region - total	**26.0**	**32.1**	**90.0**	**88.6**	**14.2**	**8.6**
Kelbajar region	8.9	11.2	32.6	32.3	5.6	3.5
Lachyn region	8.1	10.4	26.5	26.9	4.2	2.5
Gubadly region	4.4	5.3	14.7	13.9	2.1	1.2
Zangilan region	4.6	5.2	16.2	15.5	2.3	1.4
Dakhlik Shirvan economic region - total	**36.5**	**43.8**	**106.0**	**109.5**	**17.4**	**9.0**
Gobustan region	5.9	6.9	15.4	15.9	2.2	1.1
Ismayilly region	9.3	10.7	28.5	30.7	5.5	2.7
Agsu region	9.1	11.0	26.8	27.8	4.3	2.0
Shamakhy region	12.2	15.2	35.3	35.1	5.4	3.2
Nakhchivan Autonomous Republic - total	**52.2**	**57.4**	**152.8**	**158.7**	**25.0**	**13.5**
Nakhchivan town	9.3	10.7	31.9	33.2	6.1	3.3
Sharur region	12.6	13.7	40.1	41.4	6.5	3.3
Babek region	10.1	11.2	24.5	25.1	3.5	1.8
Ordubad region	5.8	5.5	16.5	17.8	2.9	1.7
Julfa region	5.9	6.5	15.3	15.9	2.2	1.2
Kengerli region	3.9	4.6	10.8	10.9	1.7	0.8
Shahbuz region	2.8	3.2	8.2	8.7	1.5	0.9
Sadarak region	1.8	2.0	5.5	5.7	0.6	0.5

Birth rate is generally higher for rural women compared to urban women, and both groups have seen a slight increase since 2000 (Figure 1). Fertility rates are also higher for rural women and the overall fertility rate has declined slightly since 2000 (Figure 2).[5]

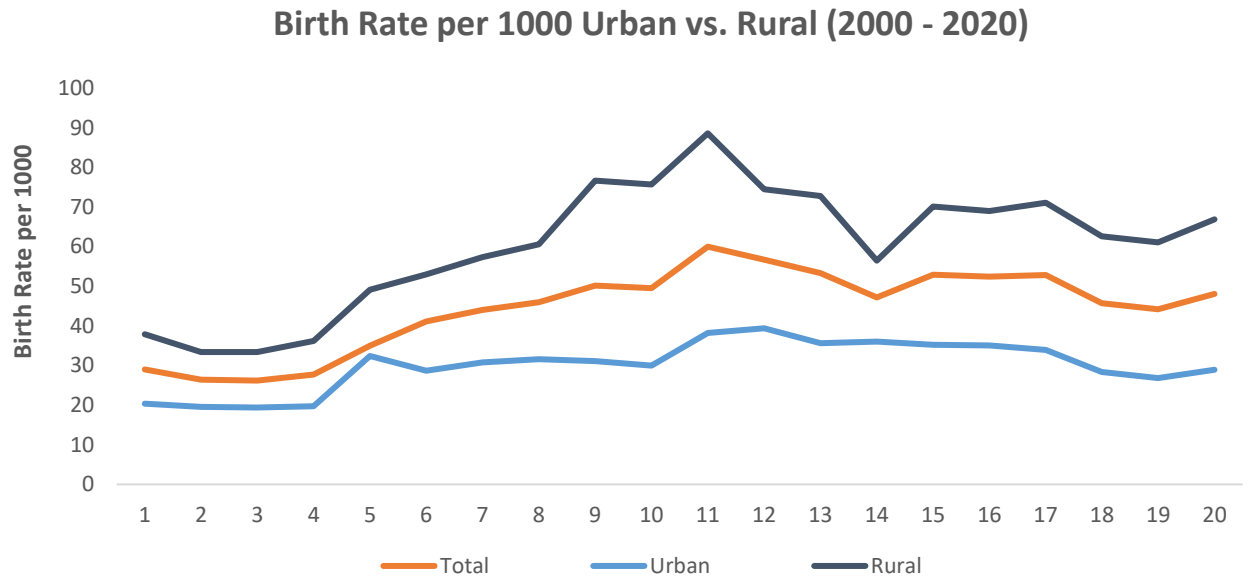

Figure 1: Birth Rate per 1000 Urban vs. Rural (2000 - 2020)

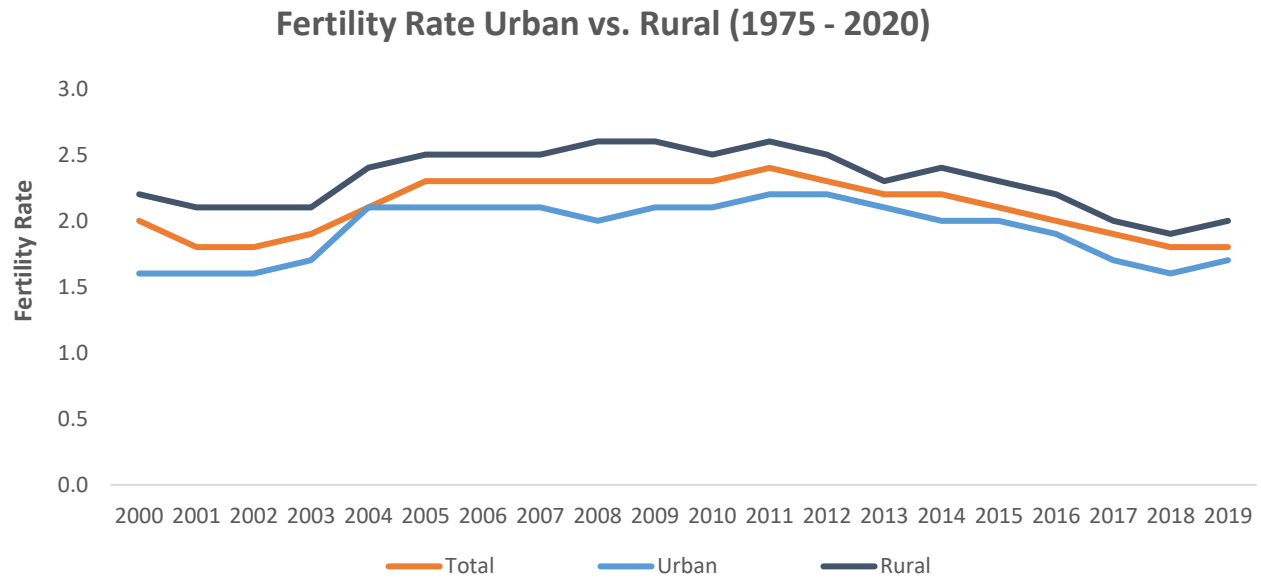

Figure 2: Fertility Rate Urban vs. Rural (2000 - 2020)

[5] State Statistical Committee for the Republic of Azerbaijan "Women and Men in Azerbaijan" (2020); https://www.stat.gov.az/source/gender/?lang=en

Labor Force Participation and Wages

Women in Azerbaijan are economically active and the difference in labor force participation rate for men and women is not large when compared to international figures. Female labor force participation rate is 69.2% compared to 74.2% for men. In 2020, women had an unemployment rate around 5.7% in 2019, compared to 4.0% for men. However, in 2017, the percentage of those who are not actively employed due to responsibilities such as keeping house, taking care of children, and caring for other family members was 96.6% for women, whereas only 3.4% were men. In total, 42.7% of women who are not active in employment state these domestic tasks as their reason for being non-active. More men are likely to be not economically active than women because they are either studying or have a pension due to a disability. The last analysis by the International Labour Organization (ILO) of the country's informal economy in 2009 showed that informal jobs accounted for 26.5% of the nonagricultural sector. Women are more likely to have informal jobs, with 41.7% of women in the nonagricultural sector estimated to be in informal jobs, compared to just 16.6% of men. [67]

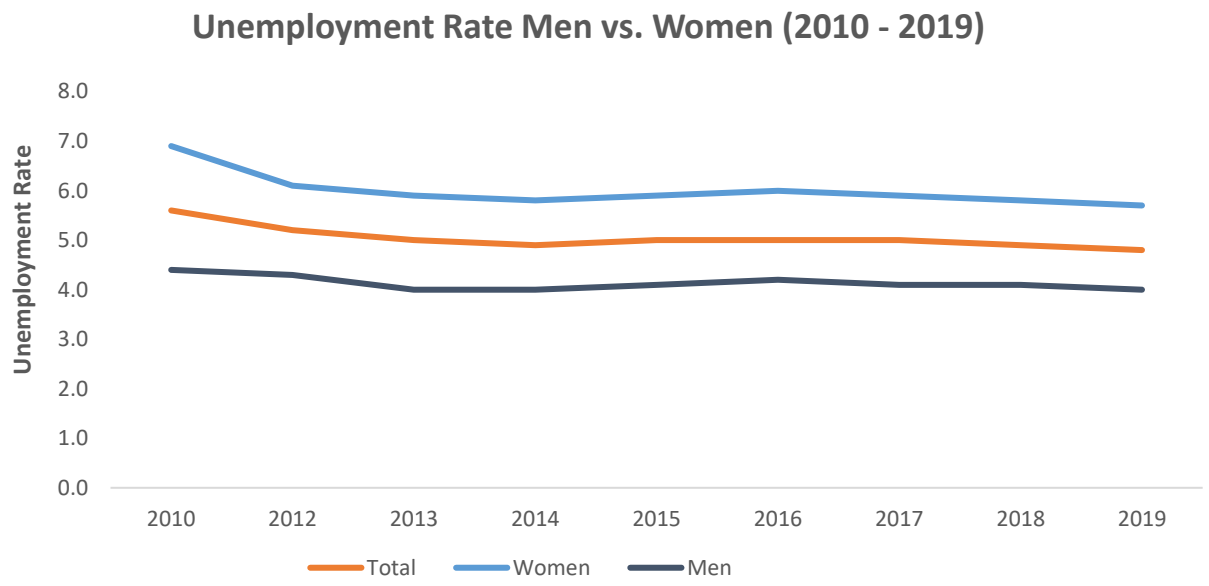

Figure 3: Unemployment Rate Men vs. Women (2010 - 2019)

Table 2: Distribution of Population Not Economically Active by Categories and Sex (2017)

Categories	Women (%)	Men (%)
Studying in educational institutions	47.8	52.2
Pensioners by age or due to long service	65.2	34.8
Pensioners with disability	42.3	57.7

[6] State Statistical Committee for the Republic of Azerbaijan "Women and Men in Azerbaijan" (2020); https://www.stat.gov.az/source/gender/?lang=en

[7] Asian Development Bank "Azerbaijan: Country Gender Assessment 2019"; Available at: https://www.adb.org/sites/default/files/institutional-document/546166/azerbaijan-country-gender-assessment-2019.pdf

Persons receiving income from property	30.1	69.9
Persons keeping house, taking care of children, and other family members	96.6	3.4

Occupational patterns also vary significantly for men and women. Women only represent a majority of the workforce in the Art, Entertainment and Recreation, Human Health and Social Work, and Education sectors. Critically for the present project there is significant disparity in ICT, Professional/Scientific/Technical, and Public Administration sectors (Figure 4). This is further highlighted by comparing the number of men and women in civil service positions, which will be crucial actors for the CIEWS activities (Table 3). Finally, the disparity can also be seen in the earned wages for men and women across all sectors in Azerbaijan (Figure 5). [8]

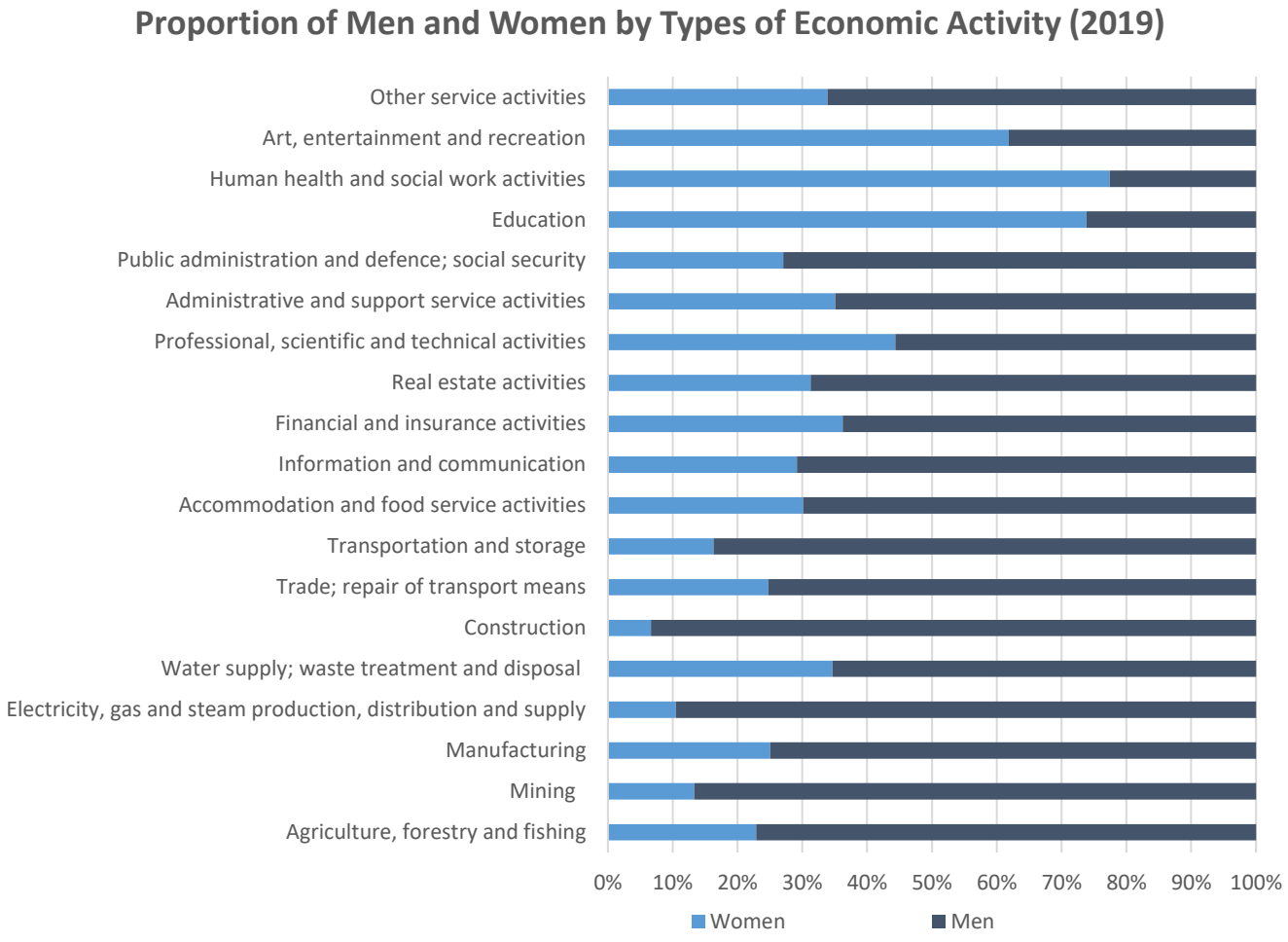

Figure 4: Proportion of Men and Women by Types of Economic Activity

[8] State Statistical Committee for the Republic of Azerbaijan "Women and Men in Azerbaijan" (2020); https://www.stat.gov.az/source/gender/?lang=en

Table 3: Civil Service Posts by Classification and Gender

Age groups	Administrative posts according to superior-3 classifications[9]		Administrative posts according to 4–7 classifications		Supplementary posts of civil service	
	women	men	women	men	women	men
Under 30 years old	11.2	8.0	21.7	15.9	21.3	18.1
30–34	21.5	17.1	17.8	15.8	14.9	16.5
35–44	32.5	29.5	20.6	25.1	19.2	23.3
45–54	19.8	17.4	20.4	19.0	23.6	20.7
55–64	13.7	21.2	18.9	22.7	20.5	19.8
65+	1.3	6.8	0.6	1.5	0.5	1.6
Total, %	100.0	100.0	100.0	100.0	100.0	100.0
persons	465	918	5076	17129	2979	2801

[9] The civil service classification categories range from one to seven.

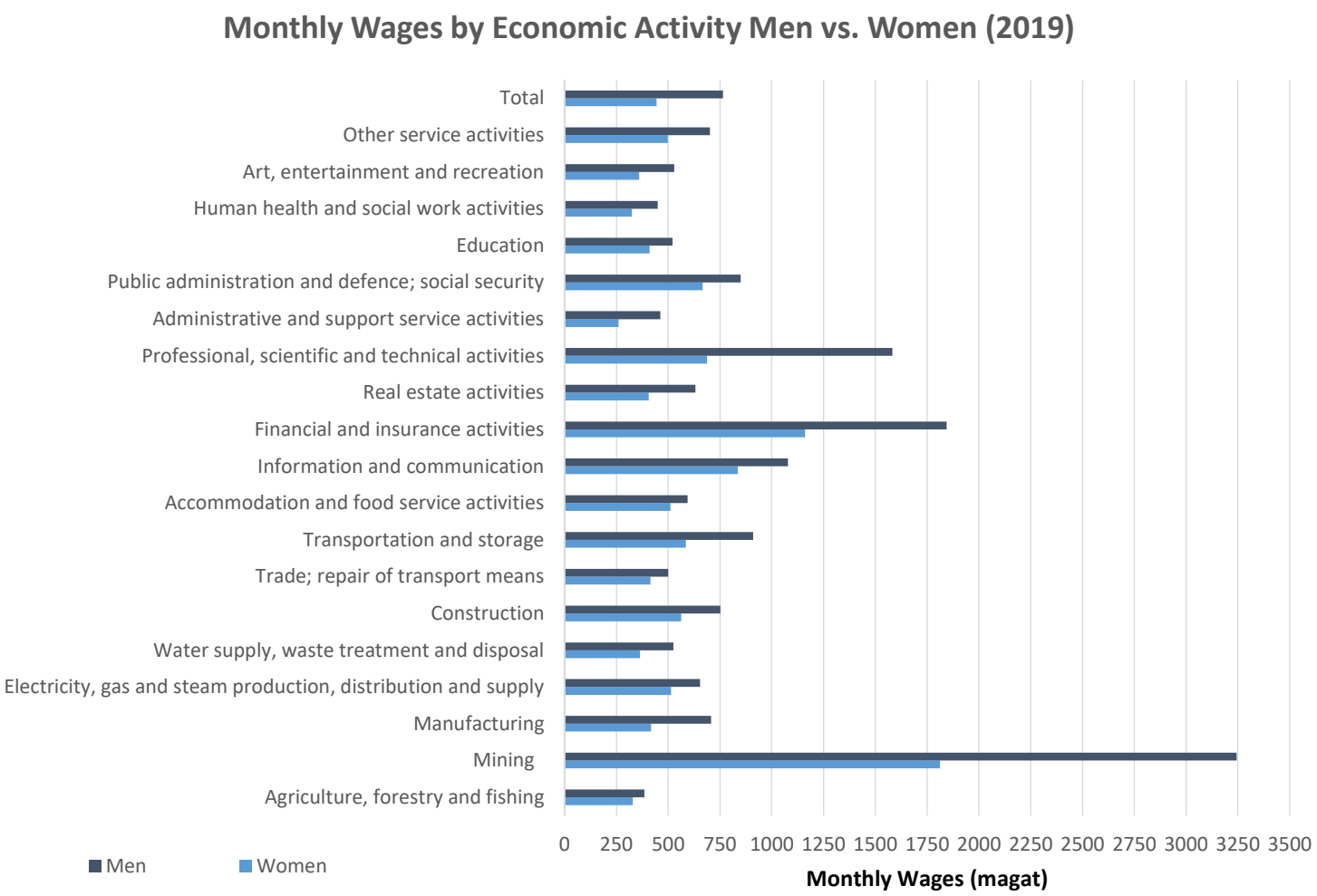

Figure 5: Monthly Wages by Economic Activity Men vs. Women (2019)

According to numerous accounts, women's decisions concerning employment are strongly influenced by cultural norms regarding the types of labor and places of work suitable and appropriate for men and women. Working hours, the nature of responsibilities, the presence of men work colleagues and proximity to men customers are only a few of the many factors cited by families and communities to mark an employment opportunity or promotion as "unsuitable for women." This influences the educational choices of girls as they become limited to choosing jobs considered "(a) 'appropriate for women' ('teacher' being the most common), and (b) allows women to perform a full workload of family responsibilities.[10]

Education

In 2019, female students represented 46.7% of students in general education institutions[11], 45.5% of vocational students, 64% of secondary specialized institutions, and 48.8% of doctoral students. General education attainment is relatively similar for men and women in rural and urban areas. In Azerbaijan,

[10] Asian Development Bank "Azerbaijan: Country Gender Assessment 2019"; Available at: https://www.adb.org/sites/default/files/institutional-document/546166/azerbaijan-country-gender-assessment-2019.pdf

[11] General education in Azerbaijan includes primary, general secondary, and full secondary education,

women are less represented in technical and technological studies with the exception of natural sciences.[12]

Table 4: Comparison of Field of Study for Men and Women

Field of study	Percentage distribution		Sex distribution	
	women	men	women	men
Education	39.8	11.8	76.0	24.0
Humanitarian and social	12.7	10.7	52.7	47.3
Culture and art	4.6	2.6	62.4	37.6
Economics and management	13.8	25.2	34.0	66.0
Natural sciences	6.2	3.3	64.1	35.9
Technical and technological	12.0	33.0	25.5	74.5
Agriculture	1.6	3.1	33.1	66.9
Health, welfare and services	9.3	10.3	45.9	54.1
Total (%)	100.0	100.0	48.5	51.5

Table 5: Pre-School and General Education Enrollment (2019)[13]

Pre-School Enrollment		General Education Enrollment[14]	
women	men	women	men
60,216	68,610	754,980	861,125

Use of Time and Communications

Use of time for men and women varies significantly with men and women, particularly with regards to unpaid work (women spend ~3x time) and paid work/study (Men spend ~2x time) (Figure 6).[15]

[12] State Statistical Committee for the Republic of Azerbaijan "Women and Men in Azerbaijan" (2020); https://www.stat.gov.az/source/gender/?lang=en

[13] State Statistical Committee for the Republic of Azerbaijan "Main indicators of education"; https://www.stat.gov.az/source/education/?lang=en

[14] This only includes enrollment for day general education, which has the vast majority of enrolled students compared to night general education.

[15] State Statistical Committee for the Republic of Azerbaijan "Women and Men in Azerbaijan" (2020); https://www.stat.gov.az/source/gender/?lang=en

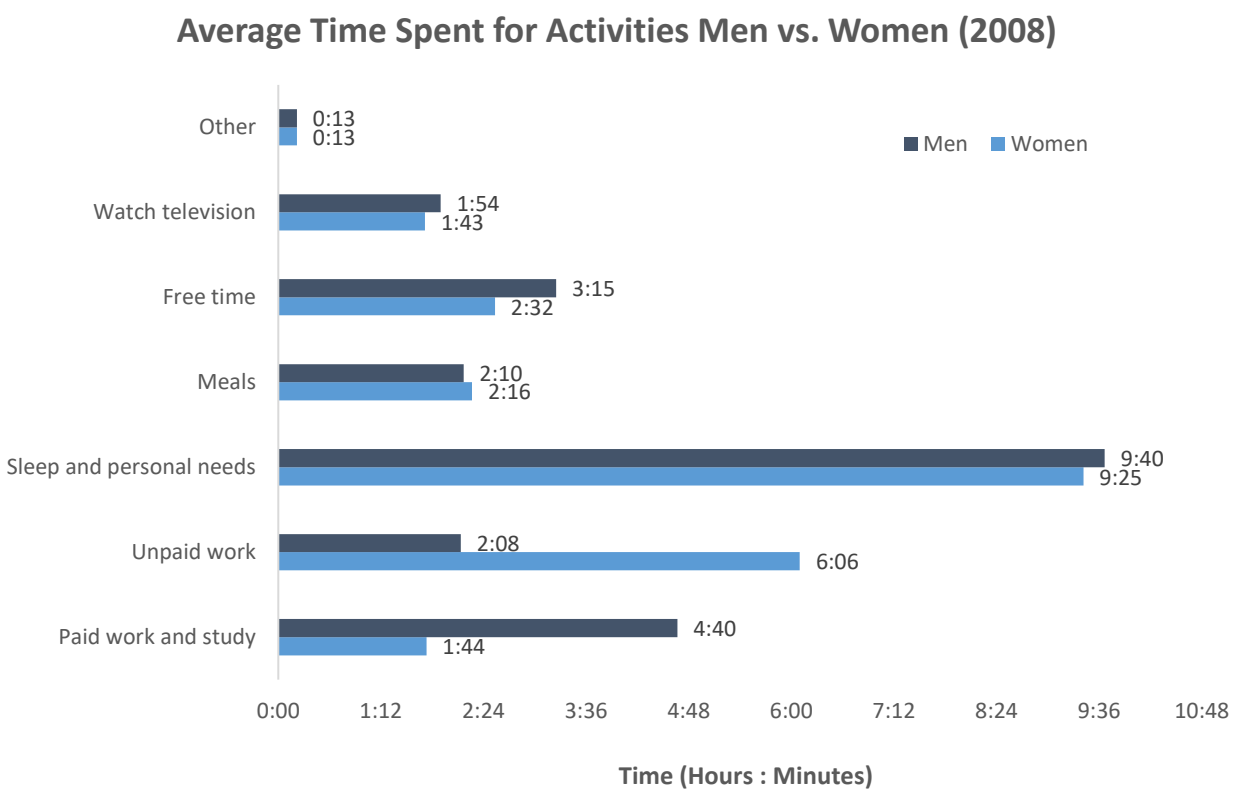

Figure 6: Average Time Spent for Activities Men vs. Women (2008)

Access to internet and mobile phones also differed between men and women. An estimated 78.4% of women at the national level had access to the internet and 72.1% of women at the national level had access to mobile phones. This is compared to 83.9% of men at the national level had access to the internet and 77.5% of men at the national level had access to mobile phones (Figure 7, Figure 8). These values are lower when looking at rural communities. **This is a critical metric to understand for the development and deployment of CIEWS interventions**.[16]

Amongst youth, the vast majority in Azerbaijan have access to the internet. An estimated 98.3% of girls aged 15-24 are online, compared to 96.8% of boys of the same age. In addition, 91.9% of children under 15 years old are accessing the internet.[17]

There is also universal access to television across the population.[18]

[16] State Statistical Committee for the Republic of Azerbaijan "Women and Men in Azerbaijan" (2020); https://www.stat.gov.az/source/gender/?lang=en

[17] UNICEF, 2019. Press Release – Safe Internet Day: We must all help Azerbaijan's children and young people explore the digital world in safety says UNICEF. Available at: https://www.unicef.org/azerbaijan/press-releases/safer-internet-day-we-must-all-help-azerbaijans-children-and-young-people-explore (Accessed: 31 May 2024)

[18] Source: Communication from UNICEF Azerbaijan

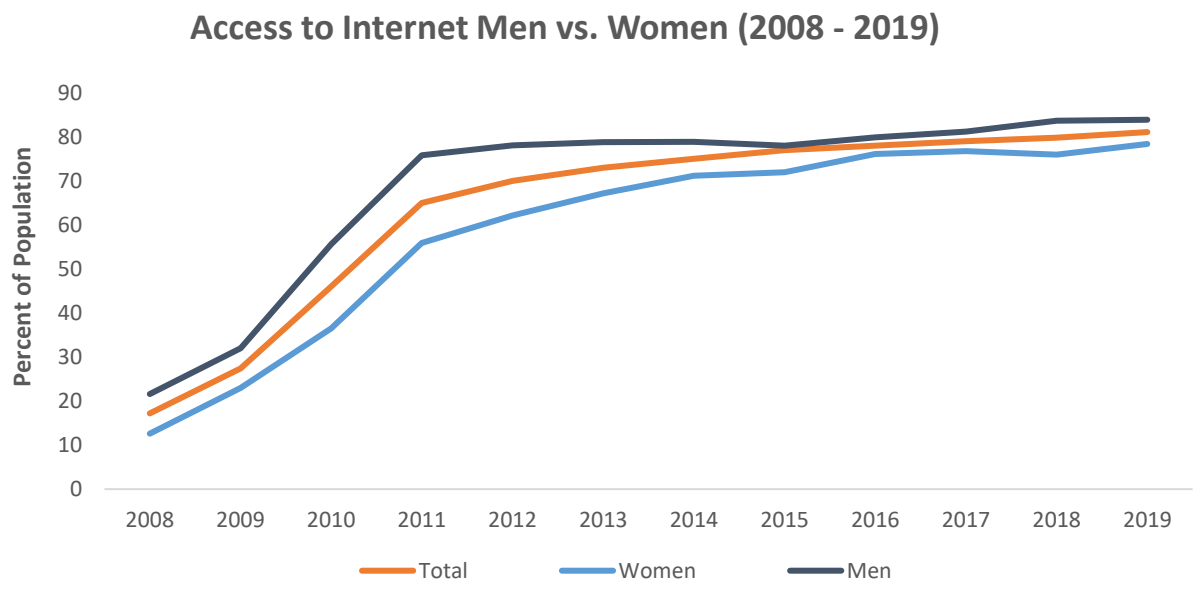

Figure 7: Access to Internet Men vs. Women (2008 - 2019)

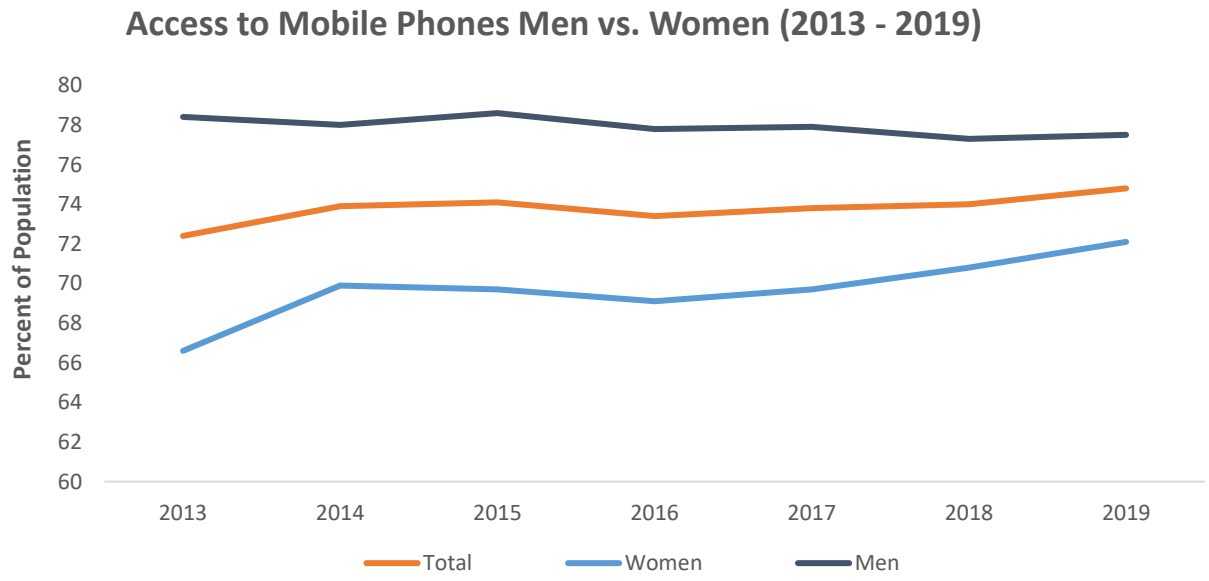

Figure 8: Access to Mobile Phones Men vs. Women (2013 - 2019)

Violence Against Women

An estimated 14% of Azerbaijani women between 15 and 49 years of age experience intimate partner violence (physical and/or sexual) at least once in their lifetime. Data in 2017 shows 1,031 cases of domestic violence reported with 807 (78%) by women and 224 by men (22%). An estimated 10% of the population

had experienced physical and/or sexual intimate partner violence in the last 12 months.[19][20] The last comprehensive study covering domestic violence was conducted in 2009 and up-to-date data on the incidence of domestic violence are limited. The study "Violence against Persons" by the State Statistical Committee was a survey about experiences of violence covering a random sample of 18,000 households throughout the country. This study found that 18.3% of all respondents reported facing violence during their lifetime. The majority of those reporting experiences of violence were female respondents, with only 0.5% of males reporting experiencing violence.[21] In the context of disaster risk management, violence against women and girls (VAWG) is a known risk in emergency situations.[22]

Political Representation

Political representation at the national level is still limited for women with only about 18% of Parliament seats held by women in 2020 (up just 2 seats since 2010) (Table 6). [23]

Table 6: Parliament Seats for Men vs. Women (1990 - 2020)

Years	Number, person		Sex distribution, %	
	women	men	women	men
1990	15	335	4.3	95.7
1995	15	109	12.1	87.9
2000	13	109	10.7	89.3
2005	14	111	11.2	88.8
2010	20	105	16.0	84.0
2015	21	104	16.8	83.2
2020	22	99	18.2	81.8

Compared to the national level, women's representation in elected positions at the municipal level is growing more rapidly. In 2004, women comprised 4% of those elected to municipal councils. By 2009, this increased to 27% and grew further to 35% in 2014.[24] As highlighted above, women represent less than a third of civil servants, and their representation is mostly in lower-level positions.

Internally Displaced Persons

According to the Government of Azerbaijan, there were 609,029 internally displaced persons (IDPs) as at the end of 2013, predominantly former residents of the Nagorno Karabakh and the seven surrounding territories, who have been displaced since the armed conflict in and around the Nagorno-Karabakh region

[19] Asian Development Bank "Azerbaijan: Country Gender Assessment 2019"; Available at: https://www.adb.org/sites/default/files/institutional-document/546166/azerbaijan-country-gender-assessment-2019.pdf
[20] UN Women Global Database on Violence Against Women; Available at: https://evaw-global-database.unwomen.org/en/countries/asia/azerbaijan#1
[21] Asian Development Bank "Azerbaijan: Country Gender Assessment 2019"; Available at: https://www.adb.org/sites/default/files/institutional-document/546166/azerbaijan-country-gender-assessment-2019.pdf
[22] International Bank for Reconstruction and Development / The World Bank, 2023. Violence Against Women and Girls Resource Guide: Disaster Risk Management Brief
[23] State Statistical Committee for the Republic of Azerbaijan "Women and Men in Azerbaijan" (2020); https://www.stat.gov.az/source/gender/?lang=en
[24] Asian Development Bank "Azerbaijan: Country Gender Assessment 2019"; Available at: https://www.adb.org/sites/default/files/institutional-document/546166/azerbaijan-country-gender-assessment-2019.pdf

which ended with the 1994 ceasefire, which to date is still in place. About 50 per cent of IDPs live in the urban areas of Baku and Sumgayit.[25]

The Azerbaijan government has begun to expend significantly more resources to improve the lot of the displaced, who are 7 per cent of the total population – one of the highest rates in the world. Approximately 200,000 were moved into new housing from 2011-2014. Azerbaijan's IDPs benefit from free or low-cost education, health care and energy and have some special employment opportunities, though their ability to express their interests is limited through their inability to elect municipal representatives. The 40,000 from Nagorno-Karabakh are in principle represented as a group by the Azerbaijani Community of Nagorno-Karabakh Social Union, but its leadership is not fully popularly elected, and the 560,000 displaced from the occupied districts around Nagorno-Karabakh are not well represented. The political voice of IDPs thus remains weak. It has been noted that they should be more effectively integrated into decision-making about housing, services, and other community needs, as well as contingency planning for emergencies and confidence-building measures.[26]

Global Gender Gap Index

In the 2020 Global Gender Gap Index (GGGI)[27], Azerbaijan scored 0.687 ranking 94th out of 153 countries globally and 23rd out of 26 countries in the Eastern Europe / Central Asia group (Table 7). Azerbaijan's performance varied significantly across the four pillars of the GGGI ranking 33rd in Economic participation and opportunity, 60th in Educational attainment, 152nd in Health and Survival, and 140th in Political empowerment. Detailed indicators for the pillars can be seen in Table 8 below.

Table 7: 2019 GGGI Rankings for Eastern Europe and Central Asia Countries

Country	Regional Rank	Global Rank	GGGI Score
Latvia	1	11	0.785
Albania	2	20	0.769
Moldova	3	23	0.757
Estonia	4	26	0.751
Belarus	5	29	0.746
Lithuania	6	33	0.745
Slovenia	7	36	0.743
Serbia	8	39	0.736
Poland	9	40	0.736
Bulgaria	10	49	0.727
Romania	11	55	0.724
Ukraine	12	59	0.721
Croatia	13	60	0.720
Slovak Republic	14	63	0.718
Bosnia and Herzegovina	15	69	0.712
North Macedonia	16	70	0.711
Montenegro	17	71	0.710
Kazakhstan	18	72	0.710

[25] Report of the Special Rapporteur on the human rights of internally displaced persons, Chaloka Beyani (2014) Available at: https://www.ohchr.org/EN/HRBodies/HRC/RegularSessions/Session29/Documents/A_HRC_29_34_Add_1_en.doc
[26] Tackling Azerbaijan's IDP Burden: https://www.crisisgroup.org/europe-central-asia/caucasus/azerbaijan/tackling-azerbaijan-s-idp-burden
[27] Global Gender Gap Report (2020); Available at: http://www3.weforum.org/docs/WEF_GGGR_2020.pdf

Georgia	19	74	0.708
Czech Republic	20	78	0.706
Russian Federation	21	81	0.706
Kyrgyz Republic	22	93	0.689
Azerbaijan	23	94	0.687
Armenia	24	98	0.684
Hungary	25	105	0.677
Tajikistan	26	137	0.62

Table 8: Detailed GGGI Metrics for Azerbaijan (2019)

GGGI Index	Rank	Score	Average	Female	Male	F/M
Global Gender Gap Overall	94	0.69				
Economic participation and opportunity	33	0.75	0.582			
Labour force participation rate (%)	22	0.93	0.661	69.2	74.2	0.9
Wage equality for similar work, 1-7 (best)	12	0.76	0.613			5.4
Estimated earned income (international $ 1,000)	114	0.51	0.499	10.8	21.2	0.5
Legislators, senior officials and managers (%)	39	0.62	0.356	38.1	61.9	0.6
Professional and technical workers (%)	1	1	0.756	58.2	41.8	1.4
Educational Attainment	60	1	0.954			
Literacy rate (%)	57	1	0.899	99.7	99.9	1
Enrollment in primary education (%)	93	1	0.757	92.3	92.6	1
Enrollment in secondary education (%)	109	0.99	0.954	88.2	88.9	1
Enrollment in tertiary education (%)	1	1	0.931	29.7	25.9	1.2
Health and Survival	152	0.94	0.958			
Sex ratio at birth (%)	152	0.89	0.925	-	-	0.9
Healthy life expectancy (years)	1	1.06	1.034	66.9	62.8	1.1
Political Empowerment	140	0.06	0.239			
Women in parliament (%)	107	0.2	0.298	16.8	83.2	0.2
Women in ministerial positions (%)	145	0	0.255	0	100	0
Years with female/male head of state (last 50)	73	0	0.19	0	50	0

Gender Development Index (GDI)

GDI is the ratio of the female to the male HDI. The GDI measures gender inequalities in achievement in three basic dimensions of human development: health (measured by female and male life expectancy at birth), education (measured by female and male expected years of schooling for children and mean years for adults aged 25 years and older) and command over economic resources (measured by female and male estimated GNI per capita). Country groups are based on absolute deviation from gender parity in HDI. This means that the grouping takes into consideration inequality in favour of men or women equally. The GDI is calculated for 167 countries. The 2019 female HDI value for Azerbaijan is 0.730 in contrast with 0.774 for males, resulting in a GDI value of 0.943, placing it into Group 3.[28] In comparison, GDI values for nearby Kazakhstan and Uzbekistan are 0.980 and 0.939, respectively (Table 9).[29]

Table 9: Gender Development Index (GDI) Values for Azerbaijan and Comparison Countries

Country / Region	F-M Ratio	HDI Values		Life expectancy at birth		Expected years of schooling		Mean years of schooling		GNI per Capita	
	GDI Value	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male
Azerbaijan	0.943	0.730	0.774	75.5	70.5	13.0	12.8	10.2	10.9	8,919	18,664
Kazakhstan	0.980	0.807	0.823	77.7	69.2	15.8	15.1	10.9	11.9	16,791	29,296
Uzbekistan	0.939	0.695	0.740	73.8	69.6	11.9	12.2	11.6	12.0	5,064	9,230
Europe and Central Asia	0.953	0.768	0.806	77.7	71.1	14.5	14.8	9.9	10.7	12,373	23,801
High HDI	0.961	0.736	0.766	78.0	72.8	14.1	13.9	8.2	8.7	10,529	17,912

Gender Inequality Index (GII)

GII reflects gender-based inequalities in three dimensions – reproductive health, empowerment, and economic activity. Reproductive health is measured by maternal mortality and adolescent birth rates; empowerment is measured by the share of parliamentary seats held by women and attainment in secondary and higher education by each gender; and economic activity is measured by the labour market participation rate for women and men. The GII can be interpreted as the loss in human development due to inequality between female and male achievements in the three GII dimensions.

Azerbaijan has a GII value of 0.323, ranking 73 out of 162 countries in the 2019 index. In Azerbaijan, 16.8 percent of parliamentary seats are held by women, and 93.9 percent of adult women have reached at least a secondary level of education compared to 97.5 percent of their male counterparts. For every 100,000 live births, 26.0 women die from pregnancy related causes; and the adolescent birth rate is 55.8

[28] Group 1 comprises countries with high equality in HDI achievements between women and men (absolute deviation of less than 2.5 percent), group 2 comprises countries with medium to high equality in HDI achievements between women and men (absolute deviation of 2.5–5 percent), group 3 comprises countries with medium equality in HDI achievements between women and men (absolute deviation of 5–7.5 percent), group 4 comprises countries with medium to low equality in HDI achievements between women and men (absolute deviation of 7.5–10 percent) and group 5 comprises countries with low equality in HDI achievements between women and men (absolute deviation from gender parity of more than 10 percent).

[29] UNDP Human Development Report (2020); Available at: http://hdr.undp.org/sites/all/themes/hdr_theme/country-notes/AZE.pdf

births per 1,000 women of ages 15-19. Female participation in the labour market is 63.4 percent compared to 69.7 for men (Table 10).[30]

Table 10: Azerbaijan GII for 2019 compared to selected countries and groups

Country / Region	GII Value	GII Rank	Maternal Mortality Ratio[31]	Adolescent Birth Rate	Female Seats in Parliament (%)	Population with at least some secondary education		Labour force participation rate	
						Female	Male	Female	Male
Azerbaijan	0.323	73	26.0	55.8	16.8	93.9	97.5	63.4	69.7
Kazakhstan	0.190	44	10.0	29.8	22.1	99.3	99.6	62.7	75.5
Uzbekistan	0.288	62	29.0	23.8	16.4	99.9	100.0	52.4	78.1
Europe and Central Asia	0.256	—	19.9	27.8	23.1	79.9	88.1	45.0	70.0
High HDI	0.340	—	62.3	33.6	24.5	69.8	75.1	54.2	75.4

IMAGES Study – Project Relevant Gender Survey

The International Men and Gender Equality Survey (IMAGES) was conducted in Azerbaijan from April to July 2016.[32] The study aimed to understand men's practices and attitudes as they relate to gender equality, roles and dynamics, parenting and caregiving, household relationship dynamics, health (including sexual and reproductive health and rights), and son preference. The study consisted of both a quantitative survey, as well as a qualitative component consisting of semi-structured interviews with respondents living in urban areas. The qualitative research focused on exploring men's and women's gender roles, beliefs, and perceptions in terms of sexual and reproductive health-related decision-making (including son preference), intimate partner violence, early marriage, and family planning. Overall, the study found:

- **Rigid notions of gender and gender equality are pervasive.** What it means to be a man or a woman are deeply entrenched in the minds of Azerbaijani men and women. IMAGES data show that men in Azerbaijan are more likely to report agreeing with rigid or traditional notions of gender compared to women. Masculinity in particular is strongly associated with a man's ability to financially support his family.
- **Many men are skeptical of gender equality and women's rights, while others believe such movements have not gone far enough.** Though large proportions of both men and women in this study felt that gender equality had come far enough, the vast majority believe that more needs to be done to promote equality. However, more men need to be brought on board; overall, men were more likely than women to report negative attitudes towards the promotion of rights for women.

[30] UNDP Human Development Report (2020); Available at: http://hdr.undp.org/sites/all/themes/hdr_theme/country-notes/AZE.pdf
[31] Maternal mortality ratio is expressed in number of deaths per 100,000 live births and adolescent birth rate is expressed in number of births per 1,000 women ages 15-19.
[32] International Men and Gender Equality Survey (IMAGES) "GENDER EQUALITY AND GENDER RELATIONS IN AZERBAIJAN: CURRENT TRENDS AND OPPORTUNITIES" (2018); Available at: https://promundoglobal.org/wp-content/uploads/2018/12/IMAGES-Azerbaijan-report.pdf

- **Women still do the majority of the care work, but men also participate albeit in limited ways**. Men's participation across all caregiving tasks is lower than women's, although men tended to report higher rates for their own participation than women reported about men. Respondents indicated that women mainly performed tasks related to the physical care of the child, while tasks related to spending time with the child were more often shared equally or done together.
- **Many men are pushing back against harmful notions of masculinity and this is indicative of the positive trends in the dynamics of gender relations**. Over half of men believe that men ought to share the housework (e.g. doing dishes, cleaning, and cooking), and almost all men agreed that providing day-to-day care for children is as important as providing for them financially. There also seems to be clear recognition by large numbers of men that their participation as fathers is not fulfilling if they are only limited to economic or "productive" roles. Over one third of men said that they spend too little time with children because of work and similar proportions of men reported they would work less if it meant they could spend more time with their children.
- **Men continue to dominate decision-making power in intimate relationships.** Men traditionally have more influence in all measured decision-making spheres, except in areas with greater female participation, such as children's health. There are also incongruencies in perceptions of who makes decisions primarily along gender lines; for example, in sexual and reproductive health decision-making, most men reported the decision to use condom was made by themselves or jointly, all the women surveyed reported that condom use was their decision or a joint decision.
- **None of the men nor the women in the study sample reported incidences of violence against women that they witnessed.** These findings show that while many men and women are uncomfortable with violence and potentially ready to intervene, few actually turn to official reporting structures to do so. Less than 60 percent of men and women were aware of laws on domestic violence.

3. Legislative Framework for Gender in Azerbaijan

National Legislation

The Constitution of Azerbaijan provides the overall foundation for gender equity in Azerbaijan. Specifically, Article 25 guarantees "1) All people are equal with respect to the law and law court; 2) Men and women possess equal rights and liberties; and 3) The state guarantees equality of rights and liberties of everyone, irrespective of race, nationality, religion, language, sex, origin, financial position, occupation, political convictions, membership in political parties, trade unions and other public organizations. Rights and liberties of a person, citizen cannot be restricted due to race, nationality, religion, language, sex, origin, conviction, political and social belonging." Article 33 further provides that "Rights of wife and husband are equal. Care and education of children constitute both right and responsibility of parents."

Azerbaijan then passed the Law on State Guarantees of Equal Rights for Women and Men[33] in 2006. This law aims "to guarantee the equal rights status for women and men in the political, economic, social, cultural and other spheres, to ensure equal opportunities in enjoyment of the above listed rights and to prevent gender-based discrimination."

[33] Law of the Azerbaijan Republic on Providing Gender (men's and women's) equalities

This law also bans all forms of gender discrimination. It also defines women's equal rights in terms of property, education, state services, the labor market, and their equal rights as entrepreneurs and consumers. The law formalizes the state structure for mainstreaming gender equality across laws and state programs. The law requires the state to improve the legal basis of gender equality and implement programs to advance the status of women. It also states that public authorities must review legislation to analyze its implications in gender equality and make amendments, if necessary. The law also requires information dissemination on gender equality, and provision of education through the media and other means. [34][35]

Both the Constitution and the Law on State Guarantees of Equal Rights of Women and Men of Azerbaijan prohibit direct discrimination; however, none specifically contains the clause on the ban of indirect discrimination as required by the United Nations Committee on the Elimination of Discrimination Against Women (CEDAW). The government has noted that Article 12 of the Constitution stipulates that all signed international conventions become part of domestic legislation. As a result, the CEDAW antidiscrimination provisions would prevail in any legal case. [36]

The principle of equality and nondiscrimination is reflected in other legislative documents, including the Criminal Code,[37, 38] Civil Code,[39] Election Code[40] and the Labor Code.[41] In 2010, Azerbaijan enacted the Law on Prevention of Domestic Violence,[42] which addresses domestic physical, psychological, and sexual violence. It establishes the legal foundation to prevent and to prosecute domestic violence committed. It also addresses the negative legal, medical, and social outcomes for survivors. Furthermore, it includes provisions to provide legal and social assistance for women survivors of violence. In 2011, the government amended its Family Code to among other provision for marriage, set the legal age of marriage at 18 for both women and men.[43] It also updated its criminal code to prohibit early or forced marriage.[44]

International Agreements

Azerbaijan has joined a number of international conventions to promote gender equality. In 1995, Azerbaijan became a party to the Convention on the Elimination of All Forms of Discrimination against Women (CEDAW) and signed the Optional Protocol in 2000. Azerbaijan has signed the International Labour Organization (ILO) Convention concerning Equal Opportunities and Equal Treatment for Men and Women Workers and the revised Maternity Protection Convention. In 2018, the Azerbaijani

[34] Law of the Azerbaijan Republic on Providing Gender (men's and women's) equalities; Available at: https://www.legislationline.org/documents/id/16418
[35] Asian Development Bank "Azerbaijan: Country Gender Assessment 2019"; Available at: https://www.adb.org/sites/default/files/institutional-document/546166/azerbaijan-country-gender-assessment-2019.pdf
[36] IBID.
[37] Criminal Code of the Republic of Azerbaijan (2018); Available at: https://www.legislationline.org/download/id/8304/file/Azerbaijan_CC_am2018_en.pdf
[38] Azerbaijan Gender Information Center "Azerbaijan Criminal Code (gender excerpts)"; Available at: http://gender-az.org/index_en.shtml?id_doc=79
[39] IBID.
[40] IBID.
[41] Labour Code of the Republic of Azerbaijan (1999); Available at: https://www.ilo.org/dyn/natlex/docs/WEBTEXT/54131/65184/E99AZE01.htm
[42] The Law of the Republic of Azerbaijan on Prevention of Domestic Violence (2010); Available at: https://www.legislationline.org/documents/id/16419
[43] Azerbaijan Gender Information Center "Azerbaijan Family Code (gender excerpts)"; Available at: http://gender-az.org/index_en.shtml?id_doc=93
[44] Asian Development Bank "Azerbaijan: Country Gender Assessment 2019"; Available at: https://www.adb.org/sites/default/files/institutional-document/546166/azerbaijan-country-gender-assessment-2019.pdf

representative from the State Committee for Family, Women and Children Affairs (SCFWCA) was elected as a member of the CEDAW Committee for 2019–2022. [45]

The Azerbaijan Gender Information Center highlights a number of other relevant international agreements and how Azerbaijan has interacted with them (Table 11).

Table 11: International Gender Equity and Mainstreaming Agreements[46]

№	Name of the document	Date of adoption	Date of ratification by Azerbaijan
	UN Treaties		
1	Universal Declaration of Human Rights	GA Resolution No-217 A (III) of 19 December 1948	
2	Convention on the Elimination of All Forms of Discrimination Against Women	GA Resolution No-34/180 of 18 December 1979	Resolution of National Parliament No-1074of 30 June 1995
3	Declaration on Elimination of Violence against Women	GA Resolution No-48/104 of 20 December 1993	
4	Convention on the Political Rights of Women	GA Resolution No-640/VII of 20 December 1952	Resolution of National Parliament No-255 of 4 August 1992
5	Convention on Consent to Marriage, Minimum Age for Marriage and Registration of Marriages	GA Resolution No-1763 A (XVII) of 7 November 1962	Law of AR No-107-IQ of 31 May 1996
6	Convention on the Nationality of Married Women	GA Resolution No-1040 (XI) of 29 January 1957	Law of AR No-104-IQ of 31 May 1996
7	Convention for the Suppression of the Traffic in Persons and of the Exploitation of the Prostitution of Others	GA Resolution No-317(IV) of 2 December 1949	Law of AR No-102-IQ of 31 May 1996
8	Protocol to Prevent, Suppress and Punish Trafficking in Persons, Especially Women and Children, supplementing the United Nations Convention against Transnational Organized Crime	GA Resolution No-55/25 of 15 November 2000	30 October 2003
9	Declaration on the Protection of Women and Children in Emergency and Armed Conflict	GA Resolution No-3318 (XXIX) of 14 December 1974	

[45] Asian Development Bank "Azerbaijan: Country Gender Assessment 2019"; Available at: https://www.adb.org/sites/default/files/institutional-document/546166/azerbaijan-country-gender-assessment-2019.pdf

[46] Azerbaijan Gender Information Center (2018); Available at: http://gender-az.org/index_en.shtml?id_doc=177

10	International Covenant on Civil and Political Rights	GA Resolution No-2200A (XXI) of 16 December 1966	Law of AR No-227 of 21 July 1992
11	International Covenant on Economic, Social and Cultural Rights	GA Resolution No-2200A (XXI) of 16 December 1966	Law of AR No-226 of 21 July 1992
12	Convention on the Rights of the Child	GA Resolution No-44/25 of 20 November 1989	Law of AR No-236 of 21 July 1992
13	International Convention on the Protection of the Rights of All Migrant Workers and Members of Their Families	GA Resolution No-45/158 of 18 December 1990	Law of AR No-581-IQ of 11 December 1998
14	Convention Relating to the Status of Refugees	GA Resolution No-429 (V) of 14 December 1950	Law of AR No-402 of 8 December 1992
15	Protocol Relating to the Status of Refugees	a) the Economic and Social Council Resolution No-1186 (XLI) of 18 November 1966 b) GA Resolution No-2198 (XXI) of 16 December 1966	Law of AR No-402 of 8 December 1992
16	International Convention on the Elimination of All Forms of Racial Discrimination	GA Resolution No-2106 (XX) of 21 December 1965	Law of AR No-95-IQ of 31 May 1996
17	Declaration of the Rights of Persons belonging to National or Ethnic, Religious and Linguistic Minorities	GA Resolution No-47/135 of 18 December 1992	
18	Slavery Convention	Signed in Geneva on 25 September 1926 with amendments by the Protocol of 7 December 1953	Law of AR No-99-IQ of 31 May 1996
19	Supplementary Convention on the Abolition of Slavery, the Slave Trade, and Institutions and Practices Similar to Slavery,	Adopted by the Conference of authorized representatives, called according to the Resolution No-608 (XXI) of the Economic and Social Council of 30 April 1956	Law of AR No-101-IQ of 31 May 1996
20	Convention against Torture and Other Cruel, Inhuman or Degrading Treatment or Punishment	GA Resolution No-39/46 of 10 December 1984	Law of AR No-103-IQ of 31 May 1996

	International Labor Organization (ILO)		
21	ILO №45. Underground Work (Women) Convention	Geneva Session No-19 of 12 June 1935	Law of AR No-637 of 3 July 1993
22	ILO №100. Equal Remuneration Convention	Geneva Session No-34 of 29 June 1951	Law of AR No-637 of 3 July 1993
23	ILO №103. Maternity Protection Convention	Geneva Session No-35 of 28 June 1952 (revised in 2000 by the Convention No-183)	Law of AR No-637 of 3 July 1993
24	ILO №111. Discrimination (Employment and Occupation Convention)	Geneva Session No-42 of 25 June 1958	Law of AR No-637 of 3 July 1993
	Other International Documents		
25	European Convention for the Protection of Human Rights and Fundamental Freedoms	Rome, 4 November 1950	Law of AR No-236-IIQ of 25 December 2001
26	Framework Convention for the Protection of National Minorities	Strasbourg, 1 February 1995	Law of AR No-897-IQ of 16 June 2000
27	Beijing Declaration	Beijing, 15 September 1995	
28	Protocol on Cooperation of Women of Eurasia on translation	Ankara, 29 March 1996	Law of AR No-141-IQ of 16 July 1996

State Institutions

Azerbaijan created the State Committee on Women's Issues within the executive arm of government in 1998. The committee's mandate was to mainstream gender concepts into laws, public policy, and state programs and projects. It also initiated the compilation and reporting of sex-disaggregated statistics and information. This committee was replaced by the State Committee for Family, Women and Children Affairs (SCFWCA) in 2006. SCFWCA was issued a stronger mandate, which involves implementing and regulating state policy on family, women, and children's affairs. Azerbaijan's state structure for gender equality also includes gender focal points (GFPs) assigned to each ministry and state agency based on Decision No. 176 of the Cabinet of Azerbaijan signed on 26 September 2000. The SCFWCA has been working to develop a number of trainings to help provide clearer guidance for the roles and responsibilities of these individual focal points. [47]

An additional integral institution for gender mainstreaming in Azerbaijan is the Azerbaijan Gender Information Center (AGIC).[48] The AGIC is an NGO that is the first informational and analytical,

[47] Asian Development Bank "Azerbaijan: Country Gender Assessment 2019"; Available at: https://www.adb.org/sites/default/files/institutional-document/546166/azerbaijan-country-gender-assessment-2019.pdf

[48] Azerbaijan Gender Information Center; Available at: https://www.gender-az.org/index_en.shtml?id_main=2&id_sub=1

bibliographical and documentary center of women's movements in the Southern Caucuses. At the national level, the AGIC has the following mandates:

- Virtual promotion of women's NGOs and women's initiative groups;
- Media monitoring women's issue in the Azerbaijan periodical press;
- To gather and disseminate necessary social gender initiatives to assist NGOs with fund-raising;
- Develop contacts with state structures working in the field of gender issues;
- To conduct training on information technology;
- To issue the informational bulletins for women's NGOs per quarter;
- Implement trainings for gender development and teach women base computer skills and information technology;
- Consultations to students, teachers, journalists and everyone interested in gender issues; and
- Maintain the Azerbaijan virtual museum on the women's movement history.

4. Mainstreaming Gender and Social Inclusion in Climate Information and Early Warning Systems

Disasters often affect women, girls, men and boys differently due to gender inequalities caused by socioeconomic conditions, cultural beliefs, and traditional practices that repeatedly have put females at a disadvantage. Understanding different gender roles, responsibilities, needs, and capacities to identify, reduce, prepare and respond to disasters are critical to effective disaster risk management (DRM). Significant evidence shows that despite gender-differentiated vulnerabilities, women and girls are also powerful agents of positive change during and after disasters. Women's empowerment is therefore an important approach to build broader community resilience and contribute to sustainable development.[49]

A WMO report[50] on the gendered impacts of weather highlights the following key findings resulting from the analysis of primary data of the research:

- **State of play:** Climate and weather impacts are not gender neutral but are experienced differently by different groups of women and men, at the intersection of other social determinants, such as economic status, location, age, disability, and marital status.
- **Opportunity:** Climate change has the potential of transformative change in gender relations and roles. Indeed, climate-induced impacts determine women and men to engage in different new activities, leading to new roles in the family and in the community. Women start taking a leadership role among their male counterparts as they engage in alternative livelihoods and income-generating activities.
- **Gap:** There is significantly scarce evidence about the impacts of climate change on different groups of men. There is also very limited empirical data on gender-differentiated needs of climate information. These are potential areas of research to be further explored through further fieldwork and case studies.

[49] GFDRR Gender and Disaster Risk Management; Available at: https://www.gfdrr.org/en/gender
[50] WMO "Gendered Impacts of Weather and Climate: Evidence from Asia, Pacific and Africa (2019); Available at: https://library.wmo.int/doc_num.php?explnum_id=10106

The Practical Action Guidebook for Multi-hazard Early Warning Systems highlighted that "in developing early warning systems, it is essential to recognize that different groups have different vulnerabilities based on their culture, gender, caste, ethnicity or other characteristics that influence their capacities to prepare, prevent and respond effectively to disasters. Women and men often play different roles in society and have different access to information in disaster situations. In addition, the elderly, disabled and socio-economically disadvantaged are often more vulnerable. It will therefore be essential to collect detailed information on all vulnerable persons in a community to ensure an effective EWS."[51]

Practical Action's review of Early Warning Systems projects in Nepal and Peru,[52] further found that:

1. Gender inequality and social marginalization increases vulnerability to disasters. The less economic, political, and cultural power women and gender minorities have before an event, the greater their suffering during and in the aftermath. Gender norms (e.g. men being viewed as decision-makers), gender roles, and gender-based violence can increase the vulnerability of women and gender minorities during a disaster. Efforts to consider gender need to be intersectional – lack of political rights, low social capital, ethnicity, age, health, disability, gender, gender identity, and sexuality influence vulnerability and capacity to respond to early warning.
2. Marginalized gender groups risk being excluded from disaster risk reduction (DRR) policies, strategies, and decision-making as DRR processes are not currently designed to enable them to engage. Marginalized gender groups participate less in EWS initiatives because of their domestic roles, lack of autonomy, mobility challenges, social isolation and persecution, and gendered assumptions (e.g. that men represent a household). Marginalized gender groups demonstrate high levels of interest in participation in DRR and EWS initiatives but feel their voices do not matter or are not welcome. Proactive efforts are needed to include the needs, priorities, and capabilities of marginalized gender groups, and magnify their voices at every stage of the EWS.
3. Gender inequality in economic capital, access to technology, and social capital have an impact on access to early warning. Gender inequality in education and literacy levels affects the capacity to receive, understand, and act upon early warning. People of different genders may have different levels of access to formal and informal dissemination channels, have different communication preferences (shaped by gender norms), and face different challenges in accessing and being able to act upon early warning.
4. Groups with higher vulnerability have different preferences and capacities to prepare and respond, including a preference for earlier evacuation. Response plans may not be designed according to the needs, capabilities, and preferences of vulnerable groups. Women and men traditionally have distinct roles in response, though changing mobility patterns mean women increasingly need to cover a wider range of roles. Disasters exacerbate discrimination faced by marginalized gender groups. Gendered cultural norms, social marginalization, and gender-based violence reduce security in responding to disasters and affect the decision-making of marginalized

[51] Practical Action "Establishing Community Based Early Warning System" (2010); Available at: https://infohub.practicalaction.org/bitstream/handle/11283/366221/4dc9402d-2bb8-4c33-bc26-2a781661b3dc.pdf?sequence=1
[52] Practical Action GENDER TRANSFORMATIVE EARLY WARNING SYSTEMS (2019); Available at: https://reliefweb.int/sites/reliefweb.int/files/resources/Gender%20Transformative%20Early%20Warning%20Systems.pdf

gender groups, disincentivizing evacuation. Vulnerable groups are at a higher risk of sexual harassment and assault during and after a disaster.

5. DRR and EWS initiatives take place in locations where some groups have less power than others, where, in some cases, individuals or groups are deliberately marginalized. Participation in EWS initiatives does not equate to influence or power over decision-making. Groups with less power (often including women and gender minorities) lack control over decision-making in disaster situations, with social norms prioritizing male leadership. Lack of power and influence over decision-making increases gendered vulnerability to disasters. Representation in DRR and EWS initiatives matters: there is a need for transformational change and empowerment of marginalized gender groups in all elements of EWS.

A 2020 report[53] published as part of the 'Strengthening Climate Information and Early Warning Systems in Cambodia to Support Climate Resilient Development and Adaptation to Climate Change' project also highlights some key learnings for gender mainstreaming in CIEWS. The project highlighted an overall three percent difference in resilience between men and women with greater gaps for individual CIEWS pillars.

Notably, regarding early warning systems, these differences included: have ability to make decisions in community (men = 67%, women = 54%), and no awareness of disaster management plans at commune/Sangkat level (men = 57%, women = 65%). There was also a noted difference in ability to read/write (men = 76%, women = 59%), which may determine how early warning messages and information are disseminated. Finally, there was a difference between men and women in daily income of less than $1.90 (men = 29%, women = 43%), which may determine economic resilience in the face of extreme weather events.

While many of the results were similar across male- and female-headed households, there were also noteworthy gaps in phone ownership (male-headed households = 51%, female-headed households = 29%), which may determine accessibility of information and usage of phone-based early warning systems. A total of 53 percent of female-headed households did not receive any warning on the last hazard they experienced, compared to 40 percent of male-headed households. Even if they did receive warning, there were significantly more female-headed households that stated they did not trust and act on these warnings at 52 percent, compared to 38 percent of male-headed households.

These issues align well to the Azerbaijan context including in i) the different threats men and women face during climate-related hazard events, ii) the decision-making power in households often being that of the man, and iii) women's lower access to mobile phones and other communication technology compared to men, as indicated in the community surveys and country gender reports. All of this research highlights critical considerations that this project will work to proactively address through the gender action plan detailed below. Specifically, the differences in decision-making ability, accessibility and usability of information streams, and trust of the information sources.

[53] Gender Learning Report 'Strengthening Climate Information and Early Warning Systems in Cambodia to Support Climate Resilient Development and Adaptation to Climate Change' (2020); Available at: https://reliefweb.int/sites/reliefweb.int/files/resources/cambodia_ciews_project_gender_learning_report_final_september_2020.pdf

5. Recommendations

Given the above context for gender and climate information and early warning systems (CIEWS) in Azerbaijan, the following recommendations are included to help ensure effective gender outcomes in implementing the proposed GCF project:

- Monitor and evaluate women's participation in decision making and access to/control of resources in relevant sectors at the national level and particularly in the beneficiary communities throughout project implementation. This should also include monitoring and addressing any challenges and barriers, particularly for accessing and utilizing climate information products.
- Engage Gender Focal Points in relevant ministries to ensure effective integration of gender considerations into end-user products and feedback mechanisms. Further, the current CIEWS institutions in Azerbaijan currently reinforce cultural norms and the lack of women in technical roles in civil service. Therefore, it is critical to work with these stakeholders through the gender focal points to proactively create new opportunities for women in technical roles and responsibilities related to CIEWS.
- Continue to identify existing women's groups and community networks that could support the active engagement of women and other vulnerable groups in community-based interventions.
- Trainings and outreach designed for local communities and end-users should be tailored to meet women's needs and requirements. This should include formatting any written or textual outreach material in a way that is accessible and digestible despite potential education/awareness gaps. This should also include options for how to utilize the climate information for women who do not have access to specific communication assets and other resources and ensuring that trainings are designed in a way that includes women and fosters their active participation despite social norms.
- Integrate specific questions and provisions for gender considerations into the four pillars of CIEWS (risk knowledge, monitoring and warning, dissemination, and response) including specific strategies for addressing any barriers to equity identified.
- Directly engage women entrepreneurs and other potential end-user organizations during the design and implementation of the CIEWS activities to ensure better access to and utilization of climate information products
- Feedback mechanisms should be built into the climate information services and communication products to ensure that they are continuously adapted to support the dynamic needs and priorities of end users, particularly women.

Minimizing Risk of Gender-based Violence (GBV)

The project should actively seek to reduce the risk of increasing gender-based violence (GBV) during disaster events by adopting a gender-sensitive and responsive approach to early warning systems (EWS). Based on awareness and understanding of the specific ways in which gender relates to EWS in Azerbaijan and the differential impacts of the EWS on gender groups, the project should ensure that disaster preparedness, response and contingency planning proactively consider gender and respond to the specific needs, concerns and capabilities of different vulnerable groups. To this end, the project should integrate,

as relevant, UNFPA's *Minimum Standards for Prevention and Response to Gender-Based Violence in Emergencies:*[54]

1. Participation: Communities, including women and girls, are engaged as active partners to end GBV and to promote survivors' access to services.
2. National Systems: Actions to prevent, mitigate and respond to GBV in emergencies strengthen national systems and build local capacities.
3. Positive Gender and Social Norms: Emergency preparedness, prevention and response programming promotes positive social and gender norms to address GBV.
4. Collecting and Using Data: Quality, disaggregated, gender-sensitive data on the nature and scope of GBV and on the availability and accessibility of services informs programming, policy and advocacy.

[54] UNFPA. Minimum Standards for Prevention and response to GBV; Available: https://www.unfpa.org/sites/default/files/pub-pdf/GBVIE.Minimum.Standards.Publication.FINAL_.ENG_.pdf

6. Gender Action Plan

The Gender Action Plan (GAP) works proactively to address the recommendations and baseline inequities highlighted in the above sections. It contains specific gender-responsive elements to be considered in the project design and during the implementation of its activities, in order to ensure effective gender and equity outcomes for the deployment of reliable climate information services and a people-centred, impact-based multi-hazard early warning system (IB-MHEWS) in Azerbaijan. The GAP is closely aligned to the activities of the logical framework and proposed sub-activities. The GAP also complements the Environment and Social Safeguards Annex, which has assessed the project as being Risk Category C.

Roles and Responsibilities

The various entities involved in the proposed project are all responsible for ensuring gender mainstreaming and the effective execution of the gender action plan, but each have unique and complementary roles and responsibilities as summarized below:

- **UNEP** – UNEP is responsible for overall compliance with the GCF Environmental and Social Policy and any required monitoring/reporting to GCF. UNEP will also issue tenders for any needed technical support from contractors and will ensure that contractors have appropriate environmental and social expertise. UNEP is ultimately responsible for ensuring that the project is implemented in alignment with Azerbaijan's national gender policies/plans and the GCF Gender Policy. Additionally, gender expertise will be provided throughout project implementation in cooperation with UNEP's Gender and Safeguards Unit and relevant Technical Partners.
- **Azerbaijan Ministry of Ecology and Natural Resources (NDA)** – The NDA will work alongside UNEP and other partner organizations during project implementation. The NDA will additionally be involved in incorporating gender considerations during project implementation and monitoring to ensure compliance with gender mainstreaming standards and goals.
- **Project Steering Committee (PSC)** – The PSC will oversee project implementation and review annual workplans and project reports. This will include ensuring that the Gender Action Plan is being followed and implemented. The PSC will ensure gender balance and include representatives from women's groups and civil society organizations, which will further help to facilitate gender mainstreaming and ensure that gender needs are reflected in project decision-making.
- **Project Management Unit (PMU)** – The PMU will be responsible for managing the implementation of the project-level Gender Action Plan (GAP) and monitoring/reporting to UNEP as the AE on the progress made in GAP implementation. The PMU will contribute to refining, as may be necessary, the gender-related baseline, indicators, and targets, and will inform the AE of any circumstances that may affect the successful implementation of the GAP. The PMU will work closely with the project-hired Gender Equality and Social Inclusion (GESI) Expert.
- **Gender Equality and Social Inclusion (GESI) Expert** – A project-hired GESI Expert will be responsible for mainstreaming gender throughout the project, assuring quality control, and facilitating a gender-responsive and, where possible, gender-transformative approach to implementation. The GESI Expert will provide support throughout project implementation and ensure, in cooperation with the PMU, that the Gender Action Plan is correctly implemented.

Provision of Gender Expertise

Gender expertise will be provided throughout project implementation in cooperation with UNEP's Gender and Safeguards Unit and relevant Technical Partners. The Project Management Unit (PMU) will be responsible for ensuring this engagement and provision and will work with the project-hired GESI Expert. The Project Steering Committee will engage gender expertise and include specific discussions on the gender dimension of different activities of the project.

Stakeholder Consultations

During the project inception phase, the Gender Equality and Social Inclusion (GESI) Expert will conduct targeted stakeholder consultations at the national and community level, which will provide an up-to-date picture of the specific context in Azerbaijan. The scope of the consultations will include: i) analysis of gendered roles, rights, needs, and opportunities in the context of climate services and early warning systems in Azerbaijan; ii) discussion on how to enhance the benefits of the project for women and other traditionally vulnerable or marginalised groups.

Based on the consultations, the GESI Expert will recommend concrete actions to be undertaken that address barriers that have limited women's engagement in the past (e.g., time, mobility, literacy constraints, assertiveness issues) and henceforth enable meaningful participation of women and other vulnerable/marginalised groups during the project implementation. The consultations will also facilitate establishment/update of baselines and refinement of relevant targets and indicators outlined in the Gender Action Plan.

The GESI Expert will additionally conduct regular stakeholder consultations throughout the project to facilitate continuous monitoring of GESI issues throughout the project implementation and collection of lessons learned.

Participation of Women and Other Vulnerable and/or Marginalised Groups

The project will promote meaningful participation of women and other vulnerable and/or marginalised groups (including children, youth, persons with disabilities, and elderly persons) as a cross-cutting priority throughout project implementation, including in decision-making and planning. The Detailed Budget Plan for the project (Annex 3) includes a dedicated budget line to facilitate implementation of specific actions to promote meaningful participation. Potential actions to be implemented are outlined below:[55, 56, 57]

- Organise targeted focus group discussions for groups with specific gendered needs to understand their capacities and requirements for meaningful participation

[55] Oxfam, 2014. Quick Guide to Promoting Women's Participation
[56] UN Women, 2020. How to promote gender-responsive localization in humanitarian action
[57] UNICEF, 2020. Engaged and heard! Guidelines on Adolescent Participation and Civic Engagement

- Avoid stereotypical assumptions about the roles and aspirations of girls, boys, young women, young men, and those with other gender identities
- Ensure that the project team, including Technical Partners, have a full understanding of the dynamics, structures, attitudes, beliefs, and power relations at national and local levels, and adapt approaches accordingly
- Provide training for the project team on facilitating participation of women and other vulnerable/marginalised groups
- Adjust the timing of meetings/consultations to accommodate women's work and domestic responsibilities
- Ensure that participants' mobility, security and accessibility needs are considered in the selection of venues
- Modify participatory approaches to accommodate participants' capacities and provide sufficient time for persons with disabilities to engage meaningfully
- Select a venue that women will be comfortable with (i.e., not a venue that is traditionally male-dominated)
- Ensure the women are made aware of meetings/consultations and are specifically invited to attend by an appropriate person
- Provide transport and/or cover transport costs for participants
- Ensure that both women and men are made aware of the importance of equal participation and women's involvement, which can be beneficial to the whole community
- Consider how the gender of project or partner personnel may affect dynamics (e.g., the presence of female personnel may make it easier to involve women) and adapt project teams accordingly (where feasible)
- Conduct meetings, consultations and workshops in a language that participants understand and engage translators where necessary
- Identify opportunities for women and other vulnerable/marginalised groups to voice their opinions (e.g., actively inviting their inputs; inviting them to sit together for mutual support; organising discussions in small groups, which may be less intimidating)
- Encourage full debate of different viewpoints before decisions are taken.

It should be noted that the list of actions outlined above is indicative and will be updated by the GESI Expert following further stakeholder consultations in Year 1 of the project implementation.

Monitoring, Evaluation and Reporting

A performance monitoring and evaluation framework (to be developed during the project inception phase) will include gender- and age-specific indicators and stipulate the collection of sex- and age-disaggregated data, as well as other data reflecting the intersectional nature of gender inequalities (e.g., disability, ethnicity, socioeconomic status) where possible. These measures will facilitate monitoring of the gender

responsiveness and social inclusiveness of project implementation, including in achieving the targets outlined in the Gender Action Plan, as well as help to inform adaptive management measures where required.

Grievance Redress Mechanism

The project will set up a grievance redress mechanism (GRM). The GRM will be designed to be able to:

I. Record, categorize and prioritize grievances;
II. Resolve grievances in consultation with the complainant and other stakeholders;
III. Inform the aggrieved parties about the solutions; and
IV. Forward any unresolved cases to higher authorities for resolution.

The GRM will address any concerns and complaints from affected parties promptly and transparently through the process, with responsibilities and required activities outlined above. The GRM will be gender and age-inclusive and responsive, and address potential access barriers to women, the elderly, people with a disability, youth and other potentially marginalised groups. It will be designed to be readily accessible to all affected parties at no cost. The GRM shall also maintain a flexible approach with respect to receiving grievances in light of identified local constraints to communications and access to resources for some stakeholders. To facilitate communications with and between the GRM and potential claimants, the GRM will seek support from the government, civil society organizations and women's groups. All individuals and communities participating in the project activities will be made aware of the GRM and the means to access it.

Gender-Based Violence (GBV)

The project will engage a full-time Gender Equality and Social Inclusion (GESI) Expert who amongst others will be responsible for ensuring a gender-responsive approach to the development of early warning systems (EWS) in the project, which can minimise the risk of gender-based violence (GBV), including violence against women and girls. The GESI Expert will consult with local GBV service providers and protection services in the development of EWS and related awareness-raising initiatives.

Gender Action Plan

The overall Gender Action Plan (GAP) for the project is detailed in Table 12 below. The total cross-cutting GESI budget[58] as per the Detailed Budget Plan (Annex 3) is USD 455,275. The total budget for GESI interventions embedded within specific sub-activities is USD 514,500. The total budget for the GAP is therefore USD 969,775.

[58] Comprises budget for the full-time GESI expert (including associated equipment and travel costs) and GESI mainstreaming measures to facilitate full, equal and meaningful participation of women and other vulnerable and/or marginalised groups in project activities.

Table 12: Project Gender Action Plan

Activity	Sub-Activity	GESI Actions	Indicators, Baseline and Targets	Timeline	Responsible Parties	Estimated Budget
Impact Statement: To increase the resilience of women and other vulnerable and/or marginalised groups in Azerbaijan by empowering them to utilise climate information and early warning systems (CIEWS) to support informed decision-making in response to climate change						
Output 1: Strengthened delivery model for climate information and multi-hazard early warning systems						
1.1 – Strengthen institutional, policy and financial frameworks for climate services	1.1.1 Develop a National Framework for Climate Services (NFCS)	Include gender-relevant inputs from the NFCS consultation workshop through the analysis of cross-cutting gender impacts in dedicated Gender Sessions (one session conducted in each year of the project)	**Indicator:** Number of gender-responsive performance standards (e.g., for employment of women, gender-responsive protocols and service delivery practices, and human resource management practices) included in the NFCS **Baseline:** 0 **Target:** TBD[59]	Years 2-6	Chief Technical Advisor GESI Expert	USD 2,500
		Evaluate gender impacts in the NFCS evaluation workshop (Year 6)	**Indicator:** Proportion of women participating in the NFCS stakeholder consultation workshops **Target:** 50% of participants in each annual NFCS stakeholder consultation workshop are women	Years 2-6	Chief Technical Advisor NHMS	Included as part of the cross-cutting GESI mainstreaming budget (Total: USD 57,750)
			Indicator: Number of sectors analysed for gender impacts incorporated into the NFCS	Years 2-6	Chief Technical Advisor GESI Expert	Included as part of the GESI Expert budget (Total: USD 337,500)

[59] To be determined based on the NFCS consultation workshops

			Baseline: 0 **Target**: At least four sectors			
	1.1.2 Establish a User Interface Platform	Promote meaningful participation of women in the National Climate Outlook Forums (NCOFs)	**Indicator:** Proportion of women participating in NCOFs **Target:** 50% of participants in each NCOF are women	Years 2-6	PMU GESI Expert NHMS	Included as part of the cross-cutting GESI mainstreaming budget (Total: USD 57,750)
	1.1.3 Develop a national financial strategy for sustainable climate services	Ensure that the financial strategy is drafted with gender-responsive language	**Indicator:** Financial strategy is drafted with gender-responsive language **Target:** Indicator achieved[60]	Years 2-6	Consultant GESI Expert	Included as part of the GESI Expert budget (Total: USD 337,500)
1.2 – Enhance climate data management and risk knowledge	1.2.1 Develop a National Climate Data and Information Management Strategy	Ensure that climate-related data and information management processes include collection of gender- and age-disaggregated data	**Indicator:** National Climate Data and Information Management Strategy includes requirement for climate-related data to be gender- and age-disaggregated, where relevant **Target**: Indicator achieved[61]	Year 2	Consultant GESI Expert	Included as part of the GESI Expert budget (Total: USD 337,500)
	1.2.2 Build capacity for multi-hazard risk profiling and vulnerability assessments	Promote meaningful participation of women in training on multi-hazard risk profiling and vulnerability assessments Ensure that gender- and child-specific vulnerabilities, capacities and needs are considered	**Indicator:** Proportion of women trained in multi-hazard risk profiling and vulnerability assessment **Target**: 50% of people trained in multi-hazard risk profiling and vulnerability assessments are women	Years 2-6	NHMS UNICEF UNEP-DHI	Included as part of the cross-cutting GESI mainstreaming budget (Total: USD 57,750)
			Indicator: Gender- and child-specific vulnerabilities, capacities	Years 2-6	UNICEF	Costs included in child-centred, multi-hazard risk and

[60] To be assessed by the GESI Expert
[61] To be assessed by the GESI Expert

		as part of the vulnerability assessments	and needs are considered as part of the vulnerability assessments **Target**: Indicator achieved			vulnerability assessments (USD 172,000)
Output 2: Strengthened observations, monitoring, modelling and prediction of climate and its impacts						
2.1 – Enhance capacity and equipment for observations and monitoring	2.1.1 Expand and optimise the hydrometeorological observation network	This sub-activity does not have a specific gender dimension but is essential for the overall success of the project and will therefore indirectly contribute to gender-responsive development impact.	N/A	N/A	N/A	N/A
	2.1.2 Strengthen the Quality Management System (QMS) in NHMS and develop an Operation and Maintenance (O&M) Plan	This sub-activity does not have a specific gender dimension but is essential for the overall success of the project and will therefore indirectly contribute to gender-responsive development impact.	N/A	N/A	N/A	N/A
	2.1.3 Upgrade the Hydromet Situation Centre	This sub-activity does not have a specific gender dimension but is essential for the overall success of the project and will therefore indirectly contribute to gender-responsive development impact.	N/A	N/A	N/A	N/A

	2.1.4 Establish Internet of Things (IoT) approaches	Promote meaningful participation of women in capacity development to design, develop and pilot IoT technologies	**Indicator:** Proportion of women participating in training on IoT technologies **Target:** 50% of participants trained on IoT technologies are women	Years 2-6	PMU ICTP	Included as part of the cross-cutting GESI mainstreaming budget (Total: USD 57,750)
2.2 – Strengthen weather, water and climate modelling and impact-based forecasting	2.2.1 Establish local Numerical Weather Prediction (NWP) and modelling processes	Promote meaningful participation of women in technical trainings	**Indicator:** Proportion of women trained in NWP and modelling processes **Target**: 50% of people trained in NWP and modelling processes are women	Years 2-6	NHMS FMI	Included as part of the cross-cutting GESI mainstreaming budget (Total: USD 57,750)
	2.2.2 Establish multi-hazard impact-based forecasting tools and capabilities	Promote meaningful participation of women in technical trainings	**Indicator:** Proportion of women trained in multi-hazard impact-based forecasting **Target**: 50% of people trained in multi-hazard impact-based forecasting are women	Years 2-6	NHMS FMI	Included as part of the cross-cutting GESI mainstreaming budget (Total: USD 57,750)
	2.2.3 Co-produce sector-specific climate analytics and information products for public and private stakeholders	Promote meaningful participation of women in consultation workshops Ensure that the needs of women and other vulnerable groups are reflected in climate information products	**Indicator:** Proportion of women participating in consultation workshops **Target:** 50% of participants in consultation workshops are women	Years 4-6	NHMS FMI	Included as part of the cross-cutting GESI mainstreaming budget (Total: USD 57,750)
			Indicator: Information requirements of women and other vulnerable groups are addressed in climate information products **Target:** Indicator achieved[62]	Years 4-6	FMI GESI Expert	Included as part of the GESI Expert budget (Total: USD 337,500)
2.3 – Develop urban climate	2.3.1 Develop an Integrated Urban Services Framework	Ensure that the Integrated Urban Services Framework (IUSF) takes into account gendered needs of	**Indicator:** IUSF drafted with gender-sensitive language and	Years 2-4	FMI GESI Expert	Included as part of the GESI Expert

[62] To be assessed by the GESI Expert

services for health		climate-vulnerable sectors in urban contexts	includes specific gender-responsive actions **Target:** Indicator achieved[63]			budget (Total: USD 337,500)
	2.3.2 Enhance the air quality monitoring system	This sub-activity does not have a specific gender dimension but is essential for the overall success of the project and will therefore indirectly contribute to gender-responsive development impact.	N/A	N/A	N/A	N/A
	2.3.3 Co-produce target analytics and decision support for health	Tailor health-related forecasting and the decision-support system (DSS) for health to the needs and capabilities of women and other vulnerable and/or marginalised groups	**Indicator:** Proportion of women participating in workshops and consultation meetings to facilitate partnership building between health and other sectors **Target:** At least 50% of participants in workshops and consultation meetings to facilitate partnership building between health and other sectors are women	Years 2-6	NHMS UNICEF	Included as part of the cross-cutting GESI mainstreaming budget (Total: USD 57,750)
Output 3: Enhanced dissemination and communication of climate risk information and multi-hazard early warning						
3.1 – Establish an impact-based multi-hazard early warning system (MHEWS)	3.1.1 Strengthen MHEWS organisational and decision-making processes	Conduct targeted stakeholder consultations at the national and community level to facilitate more in-depth gender assessment and update/validation of the project-level gender action plan	**Indicator:** Project-level gender assessment and gender action plan reflect outcomes of the targeted stakeholder consultations **Target:** Indicator achieved[64]	Year 1	GESI Expert	USD 10,000 (Included in GESI section of the Detailed Budget Plan)

[63] To be assessed by the GESI Expert
[64] To be assessed by the AE

		Ensure that MHEWS SOPs and communications protocols/strategies include specific actions targeted to the needs of women and other marginalised groups	**Indicator:** Number of actions targeted to the needs of women and other marginalised groups included in the SOPs and warning communication protocols **Baseline**: 0 **Target**: TBD[65]	Years 2 and 3	Consultant GESI Expert	Included as part of the GESI Expert budget (Total: USD 337,500)
		Develop specific SOPs and protocols for dissemination of risk information to vulnerable children, youth and families	**Indicator:** Specific SOPs and protocols for dissemination of risk information to vulnerable children, youth and families developed **Target:** Indicator achieved[66]	Years 2-6	UNICEF GESI Expert	USD 80,000
	3.1.2 Co-develop a socially inclusive, child- and gender-responsive communication strategy	Promote meaningful engagement and participation of women, youth, and children	**Indicator:** Communication strategy is child- and gender-responsive and tailored to the varying needs and capacities of different end-users (e.g., language requirements, literacy levels, different levels of access to communications assets) **Target:** Indicator achieved[67]	Years 2-3	GESI Expert	USD 100,000
	3.1.3 Establish a national multi-hazard alert system	This sub-activity does not have a specific gender dimension but is essential for the overall success of the project and will therefore indirectly contribute to gender-responsive development impact.	N/A	N/A	N/A	N/A

[65] Target to be defined by the GESI Expert in Year 1 of the project
[66] To be assessed by the GESI Expert
[67] To be assessed by the GESI Expert

	3.1.4 Build capacity for community MHEWS	Assess means by which women and men access weather and climate information at the community level	**Indicator:** In-depth gender consultations undertaken with gender experts, women's groups and community stakeholders on how best to design and implement community MHEWS **Baseline**: 0 **Target**: TBC[68]	Years 2-5	PMU GESI Expert	USD 40,000
	3.1.5 Engage children and youth in MHEWS	Promote meaningful participation of women/girls in community awareness-raising activities and children and youth engagement	**Indicator:** Proportion of female participants in youth platforms **Target:** 50% of participants are female	Years 2-6	UNICEF	Included as part of the cross-cutting GESI mainstreaming budget (Total: USD 57,750)
		Encourage workshop participants to consider gender and disability issues in the context of climate change and disaster risk reduction	**Indicator:** Number of discussions on gender or disability issues in the context of climate change and disaster risk reduction held during the workshops to promote innovative and results-based thinking approaches **Target:** At least 12 (one per community workshop)	Years 2-6	UNICEF GESI Expert	No additional cost implications
Output 4: Enhanced climate risk management capacity						
4.1 – Build capacity to prepare for and respond to climate risks and hazards	4.1.1 Strengthen national, sectoral and community preparedness capabilities	Promote meaningful participation of women in workshops to develop SOPs and disaster preparedness plans	**Indicator:** Proportion of women participating in workshops to develop SOPs and plans for disaster preparedness **Target**: 50% of participants in workshops to develop SOPs and plans for disaster preparedness are women	Years 3-6	PMU GESI Expert	Included as part of the cross-cutting GESI mainstreaming budget (Total: USD 57,750)

[68] Target to be defined by the GESI Expert in Year 1 of the project

		Ensure that preparedness plans consider that women and girls are at higher risk of physical and sexual violence in emergency settings	**Indicator:** Disaster preparedness plans drafted with gender-sensitive language and include specific measures to prevent and respond to violence against women and girls (VAWG)	Years 3-6	GESI Expert	Included as part of the GESI Expert budget (Total: USD 337,500)
	4.1.2 Increase public awareness and education on climate-related hazards, early warning systems and risk management	Ensure that the public awareness and education campaign is tailored to the specific needs and capabilities of women and other vulnerable and/or marginalised groups	**Indicator:** Proportion of women participating in the community-level health awareness and education campaign on climate-related health risks **Target:** 50% of participants in the community-level health awareness and education campaign on climate-related health risks are women	Years 2-6	PMU GESI Expert	Included as part of the cross-cutting GESI mainstreaming budget (Total: USD 57,750)
			Indicator: Public awareness and education materials are gender-responsive and tailored to the varying needs and capacities of different end-users (e.g., language requirements, literacy levels, different levels of access to communications assets) **Target:** Indicator achieved[69]	Years 2-6	PMU GESI Expert	Included as part of the GESI Expert budget (Total: USD 337,500)
		Educate the public on how to prepare for disasters, emphasizing the right to a life free of violence before, during, and after a disaster event and the adverse impacts that violence can have on the	**Indicator:** Information on the risks of violence against women and girls (VAWG) in disaster situations is communicated through the awareness and education campaign **Target:** Indicator achieved	Years 3-6	International Consultant GESI Expert	Included as part of the GESI Expert budget (Total: USD 337,500)

[69] To be assessed by the GESI Expert

		entire population's recovery				
	4.1.3 Conduct a targeted risk awareness and education program for women	Promote meaningful participation and engagement of women	**Indicator:** Information and education materials are gender-responsive and tailored to the varying needs and capacities of women (e.g., language requirements, literacy levels, level of access to communications assets) **Target:** Indicator achieved[70]	Years 3-6	PMU GESI Expert	Included as part of the GESI Expert budget (Total: USD 337,500)
			Indicator: Dedicated workshops conducted to enhance women's awareness and understanding of disaster risks and education on actions to protect health **Target:** Indicator achieved	Years 3-6	PMU Gender Expert	USD 70,000
	4.1.4 Disseminate targeted education materials for children and youth	Promote meaningful participation of women/girls in workshops and trainings to facilitate dissemination of targeted education materials for children and youth Provide gender-responsive recommendations to mainstream climate change into the national curricula	**Indicator:** Proportion of women/girls taking part in workshops and trainings **Target:** 50% of participants in workshops and trainings are women/girls	Years 2-6	UNICEF	Included as part of the cross-cutting GESI mainstreaming budget (Total: USD 57,750)
			Indicator: Recommendations to mainstream climate change into the national curricula are gender-responsive, where relevant **Target:** Indicator achieved[71]	Year 2	UNICEF Consultant GESI Expert	USD 50,000

[70] To be assessed by the GESI Expert
[71] To be assessed by the GESI Expert

4.2 – Establish Forecast-based Financing (FbF)	4.2.1 Develop a Roadmap for FbF	Ensure that gender-specific risks, exposure and vulnerabilities are addressed in the development of the Roadmap for FbF Ensure that rural women and other vulnerable groups are engaged as FbF stakeholders	**Indicator:** FbF Roadmap drafted with gender-sensitive language and includes specific gender-responsive actions **Target**: Indicator achieved[72]	Years 2-6	UNICEF GESI Expert	Included as part of the GESI Expert budget (Total: USD 337,500)
	4.2.2 Strengthen capacities for climate shock-responsive social protection (SRSP)	Promote meaningful participation of women in workshops and study tour in relation to climate SRSP	**Indicator:** Proportion of women participating in workshops on key concepts and international examples/lessons learned in the area of SRSP, MHEWS and FbA/FbF **Target**: 50% of workshop participants are women	Years 2-4	PMU UNICEF	Included as part of the cross-cutting GESI mainstreaming budget (Total: USD 57,750)
			Indicator: Proportion of women participating in the study tour **Target**: 50% of participants in study tour are women	Year 5	UNICEF	Included as part of the cross-cutting GESI mainstreaming budget (Total: USD 57,750)
	4.2.3 Create a national registry for enhanced community- and household-level targeting for FbF	Ensure gender-balanced coverage of the national registry Ensure that the national registry contains gender- and sex-disaggregated data	**Indicator:** Proportion of men and women in the registry **Target:** Proportion of men and women in the registry is the same as proportion of men and women in total population in Azerbaijan	Years 2-6	UNICEF Consultant	No additional cost implications
			Indicator: National registry design includes capability for data to be gender- and age-disaggregated	Years 2-6	UNICEF Consultant	No additional cost implications

[72] To be assessed by the GESI Expert

			Target: Indicator achieved[73]			
	4.2.4 Develop a model for FbF linked to SRSP	Promote meaningful participation of women in workshops to develop a model for FbF linked to SRSP	**Indicator:** Proportion of women participating in workshops to develop a model for FbF linked to SRSP **Target**: 50% of workshop participants are women	Years 2-6	PMU UNICEF	Included as part of the cross-cutting GESI mainstreaming budget (Total: USD 57,750)
		Ensure that the FbF-linked SRSP model is designed in a gender-responsive way and takes into account gender-specific vulnerabilities and needs	**Indicator:** The FbF-linked SRSP model is designed in a gender-responsive way and takes into account gender-specific vulnerabilities and needs **Target:** Indicator achieved[74]	Years 2-6	UNICEF GESI Expert	Included as part of the GESI Expert budget (Total: USD 337,500)

[73] To be assessed by the GESI Expert
[74] To be assessed by the GESI Expert