

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

Annex 13

Summary of Stakeholder Consultations and Stakeholder Engagement Plan

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****The content of this document has been redacted in accordance with the GCF Information Disclosure Policy, as names and contact details are confidential under the disclosure policy of the Accredited Entity.****

1 Introduction

The Stakeholder Engagement Plan consists of a report on in-country consultation, an analysis of the interests of the principal stakeholders, and a table outlining a proposed schedule of engagements with stakeholders throughout the term of the project.

In-country consultations were undertaken to confirm the structure and composition of the project funding proposal, using the approved Concept Note as the basis for wide-ranging discussions with an extensive group of stakeholders. Following several rounds of GCF Secretariat review and resumption of international air travel to/from Azerbaijan (halted due to COVID-19 pandemic restrictions), a further in-country mission was conducted to support further validation and refinement of the Funding Proposal. The outcomes of these discussions are summarised below, and detailed minutes of meetings are provided as Appendices 1, 2, 4 and 5.

The analysis of major stakeholders' roles in-country considers their interest in the project, their influence on it, their proposed role in the activities, and the approach the project will take to ensuring their effective engagement. The Stakeholder Engagement Activity Timetable suggests a schedule for engaging formally with the principal stakeholders, which will be reviewed and refined, as necessary, by the Project Management Unit (PMU) during the inception phase. More detailed schedules and methods of reporting on interactions will be agreed during the inception phase by the PMU and the Executing Entity (EE).

The proposed GCF project will establish sustainable climate information services and a Multi-Hazard Early Warning System (MHEWS) for the Republic of Azerbaijan based on established WMO/UNDRR standards. These services will be supported by and made sustainable through institutions, coordination mechanisms, policies and a financial framework. The transformative impact of the Project will be increased resilience to climate change threats and enhanced livelihoods of the population in Azerbaijan through strengthened climate services and impact-based multi-hazard early warning. The four project Outputs are aligned with the pillars of the Global Framework for Climate Services 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

2 Initial Engagement

The need for strengthening climate information and early warning was first communicated by one of Azerbaijan's UNFCCC focal points to UNEP in 2018. Based on this request, UNEP drafted a concise project profile and consulted with the Ministry of

Ecology and Natural Resources from September-October 2018. On 5 October 2018, the NDA (***, Minister of Ecology and Natural Resources) sent a letter to UNEP to convey the interest of Azerbaijan to develop and submit a Funding Proposal on Climate Information and Early Warning for the Green Climate Fund (GCF) with UNEP as the Accredited Entity. Subsequently, UNEP's GCF Portfolio Manager for Climate Information and Early Warning Systems (CIEWS) projects undertook a mission to Baku, Azerbaijan on 12-15 November 2018 to consult with relevant stakeholders as follows:

- Ministry of Ecology and Natural Resources: UNFCCC focal point/ Head, Environmental Awareness and Public Relations Division; Head of Division for International Cooperation; and colleagues.
- National Hydrometeorological Service (NHMS), Ministry of Ecology and Natural Resources: Deputy Director, Head Hydrologist; Director of Forecasting Bureau; Director, Scientific Research Institute.
- Ministry of Agriculture: Deputy Head, Project and Loan Management and colleague.
- State Water Agency, Ministry of Emergency Situations: Head of the Department of Water Resources.
- National Academy of Sciences: Head, Institute of Geography; Head of Seismological Service, Head of Division on landslides, Geology and Geophysics Institute.
- EU Water Initiative+: Azerbaijan project representative.
- Water Infrastructure Public Company (OSC): Head of the Division on Science, Projects and international relations; Head of Division on exploitation of irrigation systems; Deputy Head of Division on exploitation of irrigation systems.
- UNDP: Senior Programme Adviser and colleagues.

3 Stakeholder Engagement Full Proposal Development

Since the initial engagement and finalization of a concept note, project development began in full in April 2020 with an initial kick-off meeting with the Executing Entity, the Ministry of Ecology and Natural Resources (see Annex 1 for meeting minutes and agenda). The meeting was used to review, discuss and confirm the overall result areas of the project and agree to the project development work plan and timeframe.

The initial plan was to have a kick-off and subsequent meetings in-person, however, due to the COVID-19 pandemic, international consultants and staff from UNEP could not travel to the country during project development. As such, a series of virtual consultations were held from August 2020-February 2021. Stakeholders consulted include Azerbaijan's ministries, private sector, communities, and NGOs. These consultations confirmed a strong interest, provided positive feedback, and demonstrated a high level of engagement and support. The following entities were engaged in the development of the Pre-Feasibility Study (Annex 2) and Funding Proposal:

- Ministry of Ecology and Natural Resources
- Ministry of Emergency Situations (MoES)
- Ministry of Agriculture
- Ministry of Health

- National Hydrometeorological Service (NHMS)
- State Water Reserves Agency
- National Academy of Sciences
- Urban Planning Committee
- Azersu OJSC
- Land Reclamation and Water Management OJSC
- Department of Ecology and Natural Resources under Parliament
- REC Caucasus
- Khazar University
- Local Communities through REC Caucasus Baku affiliations
- Others (State Committee on Urban Planning and Architecture, Scientific Institutes, Universities, Specialists, NGOs)

A Ministerial-level meeting was held including these key stakeholders.

Consultations were undertaken by a National Consultant on the ground in Azerbaijan with virtual support provided from the international consultant team. Minutes of the meetings are provided in Appendix 2 with a summary of the key points included below.

The consultation process had several objectives, mainly to collect information from different stakeholders concerning the CIEWS baseline, to collect information regarding the existing CIEWS institutional arrangement and current barriers, to understand the needs and requirements from different stakeholders in terms of climate services and EWS, and to have a better understanding regarding how each stakeholder may contribute to the implementation of the project activities.

As it has been outlined throughout the report, the existing CIEWS is in poor condition and the current institutional and policy environment in Azerbaijan needs to be improved. Thus, several activities have been included in order to foster better collaboration and cooperation among key stakeholders. From a CIEWS point of view, the system has to be enhanced and strengthened, considering mainly the input yielded from the discussions with the NHMS and the MoES. Although there are some initiatives at the moment, it is obvious if the information collected is considered, that there is a need to enhance the current operational and monitoring procedures in both organizations. Therefore, specific activities have been included in this proposal to address these issues and to ensure that the mandate that these organizations currently have is fulfilled.

Discussions with other stakeholders outlined that the CIEWS information that they currently receive is not sufficient, and that warnings are not disseminated in a timely manner by either the NHMS or the MoES.

3.1 Ministry of Ecology and Natural Resources

The Ministry of Ecology and Natural Resources is one of the key stakeholders within the framework of this proposal, especially given the role that the National Hydrometeorological Service (NHMS) plays in the EWS in Azerbaijan. Several consultations have been held with the NHMS and a high-level meeting has been held with the Ministry. During these consultations, the NHMS outlined its existing resources and its willingness to improve the monitoring and forecasting capabilities in order to provide better climate information services for other stakeholders. It should be added that the NHMS is currently in the process of implementing several activities related to

the enhancement of its capacities, such as the acquisition of weather radars, an assessment of its monitoring network, an assessment of operational requirements, and the suitability and necessity of the implementation of an operational center. The NHMS self-assessed its capacities following a checklist based on the WMO national meteorological and hydrological services categorization and MHEWS checklists. The results from this analysis have been thoroughly used in the design of the activities of the proposed project.

3.2 Ministry of Emergency Situations

The Ministry of Emergency Situations of Azerbaijan has several regional offices and several agencies and departments. One of the main relevant departments to consider within the drafting of this proposal is the State Water Agency. Extensive consultations were held with this agency. It should be noted that this agency has ample experience in the implementation of internationally funded projects, such as the GEF project “Integrating climate change risks into water and flood management by vulnerable mountainous communities in the Greater Caucasus region of Azerbaijan”. The Ministry of Emergency Situations outlined during the consultations with the State Water Reserve Agency its capabilities and resources regarding climate services. Also, the linkages between the NHMS and the Ministry were thoroughly discussed, as well as the existing data exchange procedures.

3.3 Ministry of Agriculture

The Ministry of Agriculture is responsible for providing information to farmers, and also for collecting information regarding the state of this sector in Azerbaijan.

During the consultations with the representative of the Ministry of Agriculture, it became apparent that presently, the Ministry of Agriculture (or the department participating in these consultations) is not receiving any information regarding early warnings for any hazard. The NHMS prepares a daily bulletin with observational and forecasting information and it is disseminated to most stakeholders. This bulletin is additionally not received by the Ministry of Agriculture.

Nonetheless, it should be added that seemingly the Ministry of Agriculture staff consulted on this, did not fully understand the benefit of EWS information, because it was not considered of interest to receive this information.

The Ministry of Agriculture is deploying an electronic system for the dissemination of information to farmers. It was suggested that information about early warning can be disseminated through that system, although considering the timeliness required of an early warning system that is not advisable. Nonetheless, risk information can be disseminated through those means, as well as the information about drought warnings.

It should be noted, however, that it was agreed that information for farmers from an EWS perspective would be useful for the following:

- Individual farmer planning purposes. Two examples were agreed on:
 - A warning for flooding may benefit farmers, allowing them to plan accordingly and protect their crops as much as possible.
 - A warning for droughts may also benefit some farmers, considering alternative crops depending on the water availability and the demand of certain types of crops.
- Insurance for farmers is currently under discussion in Azerbaijan and, therefore, having information about impending disasters would help too. It should be noted

that in some countries, insurance payments are undertaken according to the information provided by EWSs.

3.4 National Hydrometeorological Service

Several consultations with the National Hydrometeorological Service (NHMS) of Azerbaijan were conducted and the main output from these discussions is outlined below:

- NHMS is responsible for the collection of hydrometeorological data in Azerbaijan. As a result, they have a network of meteorological stations and hydrological stations. Most hydrological stations are manual, while the meteorological stations are both manual and automatic. There is a need to ensure the resilience of automatic stations.
- NHMS is also responsible for the operation of the weather radars in Azerbaijan. At the moment there are several old (Soviet-time) MRL-5 radars that are still operational. However, these radars require urgent repairs and their status cannot be ascertained. Recently, three new radars have been obtained, but it has not been possible to deploy them as of yet due to the COVID-19 situation.
- NHMS is also responsible for the forecasting of the different hazards. It should be noted that this forecasting is being undertaken at the moment using the experience of the technical staff in NHMS, and no modelling procedures are followed.

It should be added that at the moment no NWP (numerical weather prediction) model is implemented in Azerbaijan. The meteorological forecasting information is based on information received from other centers, including information (no data) from the European Centre for Medium Weather Forecast (ECMWF).

3.5 State Water Reserves Agency

The State Water Reserves Agency (SWRA), under the Ministry of Emergency Situations (MoES), has the main responsibility of maintaining and controlling all of the reservoirs in Azerbaijan, including water resources planning. There are nine reservoirs in Azerbaijan under this Agency, and in order to ensure the correct operation of these reservoirs, the Agency has implemented a modelling framework based on HEC-ResSim. This modelling software is used to model the reservoir operations at all of the significant reservoirs of Azerbaijan for a variety of operational goals and constraints. The software simulates reservoir operations for flood management, low flow augmentation and water supply for planning studies, detailed reservoir regulation plan investigations, and real-time decision support. This modelling framework has been in development for the last 5 years. The SWRA has also deployed several monitoring stations in the Greater Caucasus area and in western Azerbaijan in the Kura Basin, more specifically 9 automatic hydrological stations and 3 automatic weather stations, which are being used for forecasting purposes within the HEC-ResSim model. The information from these stations is being shared with the NHMS, and the SWRA is also getting meteorological forecasting information from the hydromet department. It was raised during the consultation that the level, detail, and accuracy of the forecasting information provided by the NHMS could be improved.

In addition, the SWRA commented on the responsibilities of the MoES regarding EWS, especially regarding the communication and response components of an EWS. The MoES, as well as other ministries and stakeholders, gets daily information from the NHMS, in the form of a bulletin. Whenever information is received about a forecasted

disaster, this information is disseminated from the central MoES to the nine regional centers, and from there is disseminated to the local population whenever possible. It should be noted, however, that the information received is very general, at a regional level, and it is not very useful for EWS (preparedness and response) purposes.

3.6 National Academy of Sciences

The consultant had a meeting with personnel from the Institute of Geography of the Azerbaijan National Academy of Sciences (ANAS). Due to the absence of a research hydro-meteorological institute in Azerbaijan, this institute is responsible for the assessment and analysis of the hydro-meteorological data from an academic point of view.

Even if this institute and ANAS do not have a direct role or responsibility within the current institutional set-up for the Early Warning System in Azerbaijan, their role should be noted from the risk knowledge point of view. These are the current activities undertaken by this institute:

- Yearly, a hydro-meteorological summary book is published, outlining the main results from the past year.
- Climate change assessments are undertaken, describing how climate change will affect disasters and other hydro-meteorological parameters.
- The impact of disasters from an economic point of view is also discussed in these annual books.

It should be noted, therefore, that the main activity of this institute is to undertake research regarding disasters and their impact. The creation of stronger links between practitioners (NHMS, MoES, etc.) and research institutes was recommended. The main reason for this being the lack of accuracy provided by some of the forecasting information provided by NHMS.

3.7 Urban Planning Committee

The consultant met with personnel from the Urban Planning Committee. This committee does not use any CIEWS information directly. The Urban Planning Committee expressed the importance of including CIEWS information in their activities, particularly considering the information that the risk assessment and mapping will produce in their planning activities. At the moment, no hazard or risk information is being used for urban planning in Azerbaijan and it is not included in the current regulations and policies. It was considered important to ensure that the results from the risk exercise are embedded into the planning activities. These risk assessment and mapping activities have been thoroughly described throughout this study, and the dissemination of the results from this exercise will be critical for urban planning purposes.

3.8 Azersu OJSC

Azersu Open Joint Stock Company (Azersu) provides both clean water and wastewater in the territory of Azerbaijan. Therefore, the water distribution and sewage networks are under its responsibility.

Azersu has frequent contact with both the SWRA and the NHMS, although not on a daily basis. The main interest of Azersu on the implementation of an EWS would be in the operational information regarding flood and drought warnings so Azersu can plan accordingly. At the moment Azersu is just receiving the daily bulletin from NHMS and

some information if a disaster is predicted, although the accuracy of these predictions is limited.

3.9 Land Reclamation and Water Management OJSC

Azerbaijan Land Reclamation and Water Management Open Joint Stock Company (LRWM) – also known as Azerbaijan Amelioration and Water Management OJSC – manages and distributes water supplies to various sectors, monitors efficient use, undertakes mitigation measures against flooding, and provides technical development advice in the water management area to other stakeholders.

The mitigation measures that LRWM undertakes in the flooding field should be noted, especially considering the technical design for this. This is because, based on international practices, the technical design of flood mitigation measures is undertaken using a flood modelling approach, including hydrological and hydraulic modelling strategies. These capacities would be very valuable in the implementation of this project, especially because there is no stakeholder with these capacities in Azerbaijan. It is uncertain, however, how these measures are designed, although a technical department in LRWM is in charge of that. Also, some of these measures are undertaken within the framework of projects and developed by international consultancies. Therefore, it is believed that these capacities are limited in LRWM.

Nonetheless, it should be noted that IWM showed great interest in the proposed project and it was the stakeholder providing the most feedback from a user point of view. Additionally, LRWM has prepared project proposals for the deployment of EWS stations in the North-East of Azerbaijan, although this project has not been approved by the government. The benefit of the implementation of a MHEWS was identified for landslides, avalanches, droughts and floods.

It should be noted that the relationship with neighboring countries was raised as a very significant issue. Even if official and formal agreements exist with the Russian Federation and Iran, it is evident that from a water management point of view, cooperation with Georgia would be critical, and considering also that cooperation with Armenia is not possible at the moment for political reasons.

3.10 Department of Ecology and Natural Resources under Parliament

The Department of Ecology and Natural Resources under Parliament has the main responsibility of drafting and preparing regulations, policies and laws within the ecological, environmental and emergency field. One of the key things at this stage is that the relevant legislation for EWS and disaster risk management is more than 20 years old and, therefore, this will need to be reviewed. One important aspect related to the possible implementation of a MHEWS that would have to be assessed during the project implementation, considering the opinion of this department, is the institutional arrangement for the MHEWS. More specifically, the relationship and link among all of the different key stakeholders would have to be addressed; mainly MoES and NHMS.

3.11 REC Caucasus

REC Caucasus is an NGO undertaking community work in some areas in Azerbaijan, especially in the Greater Caucasus. They have undertaken several community-based initiatives, and their work in the formation of community groups should be highlighted. They have also provided resources for wildfire response.

The role of the communities in disaster preparedness and response was also explored through consultations with community representatives through REC Caucasus and

Khazar University. These communities are at the front-line of disasters, and in most cases, they respond to disaster with very little support from government stakeholders.

3.12 Khazar University

The consultant held discussions with the Community Disaster Expert at Khazar University. The University, through the Community Disaster Expert, has a network of communities where community-based initiatives have been undertaken. In those communities, groups have also been formed. This was undertaken within the framework of a UNICEF project, and communities were identified and selected because they were facing several disasters and because community representatives showed interest in the implementation of disaster management activities.

As above, community representatives were engaged via Khazar University, 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. A summary of the survey responses is included in table a below.¹

Table 1: Community Survey Response Summaries

Community Surveyed	Summary of Response
Saribash Village	<ul style="list-style-type: none"> • Last disaster event was in August of 2020, which included mudflows from heavy rains; • The storm event resulted in a main road connection being cut-off and other roadways and bridges were damaged and destroyed. Food was required to be transported by horse; • Current practices during disaster events include relocating cars and equipment from the river valleys where mudflow waters are expected to pass; • Although disaster risk information is disseminated throughout the community, community members are not fully aware of disaster risk; • The community does not receive any information regarding an impending disaster; • Both landlines and mobile phones are used for communication in the community; • Mobile phones were considered the most effective communication means; and • There are no designated evacuation centers or routes in the community.
Gonagkend Nature friends LLC, Guba raion	<ul style="list-style-type: none"> • Last disaster event was in July 2019, which included a rain event that resulted in backyards flooding and cattle being washed away; • Although disaster risk information is disseminated throughout the community, not all community members are aware of a disaster risk; • The community does not receive any information regarding an impending disaster; • Indicated that it would be a very good idea for monitoring equipment to be located at the community and that it would be maintained;

¹ Please see Appendix 3 for the full community surveys.

	<ul style="list-style-type: none"> • Phones, TV and the internet are used for communication in the community; • Mobile phones were considered the most effective communication means; and • There are no designated evacuation centers or routes in the community.
Hirkan National Park, Lankaran raion, Burcali village	<ul style="list-style-type: none"> • The last disaster event to affect the community was in August of 2019 in which a forest fire occurred; • The forest fire resulted in environmental pollution and the destruction of flora and fauna; • The community has a number of practices that they carry out during disaster events, including regular meetings with the local population; • The community receives meteorological warnings regularly and disseminates this information to different community members; • Indicated that it would be a good idea for monitoring equipment to be located at the community and that it would be maintained; • Mobile phones are most commonly used as a means of communication by the community; and • There are no designated evacuation centers or routes in the community.
Guba raion, Khinalig village	<ul style="list-style-type: none"> • The last disaster event to affect the community was in July of 2020 where heavy rains destroyed the village's internal roads; • This included house being flooded, the destruction of property and damage to drinking water lines; • Current community practices during disaster events include community members leaving their homes when mudflows are approaching and word of mouth informing; • The community indicated that the community does not receive information regarding an impending disaster event and that community members are not made aware of disaster events; • Indicated that it would be a good idea for monitoring equipment to be located at the community and that it would be maintained; • Landlines and mobile phones are used as a means of communication in the community; and • There are no designated evacuation centers or routes in the community.
Shaki Nature Friends LLC. Shaki raion Bash Kaldak village	<ul style="list-style-type: none"> • The last disaster event to affect the community was in June of 2010 where a mudflow event severely damaged infrastructure; • The community indicated that it receives some amount of information regarding an impending disaster event and that community members are made aware of a disaster risk; • Indicated that it would be a good idea for monitoring equipment to be located at the community and that it would likely be maintained; • Phones and the internet are used as a means of communication in the community; • Mobile phones were considered the most effective communication means; and

	<ul style="list-style-type: none"> • There are no designated evacuation centers or routes in the community.
Tovuz raion, Govlar city	<ul style="list-style-type: none"> • The last disaster event to affect the community was a mudflow in June of 2016; • Property damage occurred as a result of the mudflow in the Tovuzchay river; • The community indicated that they do not always receive information regarding an impending disaster event and that community members are only made aware of a disaster risk if it is announced on TV or through formal information channels; • Indicated that it would be a good idea for monitoring equipment to be located at the community and that it would hopefully be maintained; • TV and phone are used as a means of communication in the in the community and were considered the best means of future communication; and • There are no designated evacuation centers or routes in the community.
“Nature friends” Zagatala	<ul style="list-style-type: none"> • The last disaster event to affect the community was a mudflow that occurred in May of 2020; • The mudflow resulted in damage to agriculture as well as power and water lines; • The community indicated that they do not receive any information regarding an impending disaster event and that disaster risk information is not disseminated throughout the community; • Indicated that it would be a good idea for monitoring equipment to be located at the community and that it would be maintained; • The community uses phones as its primary means of communication; • Phones were considered the most effective communication means; and • There are no designated evacuation centers or routes in the community.

Communities surveyed provide a sample of remote villages that have had a recent disaster event. They provided project developers with an understanding of current vulnerabilities of villages in Azerbaijan that are remote and have limited resources to cope with disasters.

3.13 NGO Stakeholder Workshop

A webinar discussion was held with representatives of relevant NGOs from different regions of Azerbaijan (including the Regional Center for the Caucasus) to discuss the proposed project components and cooperation between the NGOs and the National Hydrometeorological Service (NHMS).² Additionally, a meeting was held to discuss how to ensure that the early warning system functions effectively for all Azerbaijani communities that will be utilizing the system. In addition to local governments, NGOs and civil society organizations will play a key role in the dissemination of climate and air quality data and information to communities. In the meeting, it was noted that the participating communities and NGO members have cooperated in several areas related

² Please see Appendix 4 for the NGO webinar meeting minutes.

to hazardous hydrometeorological activities and have considerable knowledge in this area. NGO participants indicated that the use of the internet, mobile phones, messaging apps such as WhatsApp and scanners, as well as meetings and trainings in the regions are of particular importance for communicating climate and weather information to participating communities. NGO participants additionally voiced their continued support for the project and expressed their willingness to work with the project team throughout development and implementation, where relevant.

3.14 Validation Workshop

Following initial project development, a validation workshop was held virtually to brief stakeholders on the current status of the proposal and garner feedback on project Outputs and overall design. Each activity of the four project Outputs were discussed and stakeholder feedback was given. Under Output 1, stakeholders indicated that CSOs should be involved in the User Interface Platform. Additionally, under Output 2, it was suggested that line ministries and local offices (including the local offices of the Ministry of Agriculture) should be involved in the development of sector-specific information products. Under Output 3, stakeholders recommended that implementation of any EWS protocols should be done through community involvement and could potentially include a Community Based Organization (CBO) from each region embedded into the implementation arrangements. Under Output 4, stakeholders stressed that the Standard Operating Procedures (SOPs) to be developed should be tailored for each community and drafted with community involvement. Regarding implementation arrangements, stakeholders indicated that it would be important to have Rayon representatives on the Project Steering Committee. Overall, stakeholders voiced their continued support for the project and offered their assistance with project development as needed.

4 Stakeholder Engagement Full Proposal Refinement

4.1 UNEP Mission to Baku – October 2022

The full Funding Proposal was first submitted to GCF in July 2021. Following several rounds of GCF Secretariat review and resumption of international air travel to/from Azerbaijan, UNEP conducted an in-country mission to Baku from 25-28 October 2022. The mission was conducted by the UNEP GCF Portfolio Manager for Climate Information and Early Warning Systems (CIEWS), Mr. ***, and UNEP Project Development Consultant, Ms. ***.

The primary objectives of the mission were:

- To brief the Ministry of Ecology and Natural Resources (NDA) and the National Hydrometeorological Service (NHMS) on the status of project development
- To conduct bilateral meetings with NHMS and other stakeholders/partners to further refine the funding proposal
- To participate in the launch of the EU-funded twinning project “Strengthening hydrometeorological and climate services in Azerbaijan”

The following entities were engaged as part of the mission:

- Ministry of Ecology and Natural Resources (NDA)
- National Hydrometeorological Service (NHMS)
- Finnish Meteorological Institute (FMI)

- International Federation of Red Cross and Red Crescent Societies (IFRC) Country Delegation in Azerbaijan
- Lithuanian Hydrometeorological Service

The mission confirmed the commitment of the NDA and national Executing Entity (NHMS) to the project, and re-emphasized that strengthening early warning systems is a high priority for the Government of Azerbaijan. The NHMS confirmed agreement on the involvement of FMI and IFRC as Technical Partners in the project, which would strengthen the technical capacity development and community-level engagement potential of the project. Involvement of FMI would also provide an opportunity to complement, leverage and scale up the activities of the EU-funded twinning project. Further details of the mission are provided in Appendix 5.

4.2 Sector Consultations – October 2023

The proposed project is designed to leverage and build on the capacity development efforts under the abovementioned EU-funded twinning project “Strengthening hydrometeorological and climate services in Azerbaijan”. In October 2023, the FMI conducted an expert mission to Baku to hold consultations with key actors in Azerbaijan’s economic sector and current/potential customers of NHMS. The consultations were held in the context of Result 7 of the twinning project, which is focused on strengthening the demand-based and commercialised service delivery capacity of NHMS.

The following stakeholders were engaged:

- Agrarian Insurance Fund
- Azerbaijan Air Navigation Services (AZANS)
- Azerbaijan Land Reclamation and Water Management OJSC
- Azerbaijan National Mine Action Agency (ANAMA)
- AzerEnerji
- Baku International Sea Trade Port
- Ministry of Defence
- Ministry of Emergency Situations.

The sector consultations indicated a strong and urgent need for hydrometeorological information across society, with all current/potential customers of NHMS consulted expressing the need for more information. Several key recommendations emerged from the expert mission as follows:

1. Develop additional observation capabilities and increase spatial and temporal resolution of observations and forecasts.
2. Use the Common Alerting Protocol (CAP) format to disseminate weather warnings to the public, authorities, and customers.
3. Introduce a Quality Management System (QMS) with certification according to the ISO9000:2015 standard to gain trust amongst commercial customers.
4. Ensure all hydrometeorological information produced by NHMS and other relevant government agencies is available to forecasters.

5. Develop a catalogue of the services currently provided by NHMS.
6. Use dialogue to influence relevant ministries of the need to increase NHMS' budget to compensate for the free exchange of information with official government users, and to propose modifications to the decree "237".
7. Propose an additional modification to the decree "237" to enable NHMS to undertake dynamic pricing according to added value, while adhering to government pricing principles.
8. Develop ICT systems to enable digital dissemination of information to customers via website, portal, application or data services.
9. Enable hydrometeorological warning generation and dissemination directly from NHMS to the public.
10. Develop NHMS staff competencies in product and service design, customer engagement, and product management.

Further findings from the consultations are reflected in Annex 14 (Market Assessment for Climate Services in Azerbaijan).

5 Role of Stakeholders

The project will need the direct involvement of a diverse range of stakeholders for each of its Outputs to be successful.

- Output 1 will need the active engagement of staff in key ministries for the design of the National Framework for Climate Services and financial strategy for sustainable climate services and in regular revisions of the agreed services. In subsequent years, private sector partners and nongovernmental organizations will need to be engaged in a similar process.
- Output 2 will need commitment from NHMS to ensure recruitment of staff is expedited and training is undertaken so that new equipment can be used and maintained, and the additional data is fully exploited.
- Output 3 will need support and input from key line Ministries, NGOs and the private sector to ensure climate risk information and early warning messages are being framed and targeted correctly.
- Output 4 will include detailed plans for interactive engagement with communities throughout the country.

All identified stakeholders have substantial capacity to influence the project positively or negatively. These stakeholders were all consulted during the preparation of the Feasibility Study and the Funding Proposal.

The Stakeholder Engagement Plan (SEP) has been prepared and will be applied to all Outputs of the proposed project to ensure the continuing participation of stakeholders throughout its implementation. This plan will serve to ensure appropriate consultation of and coordination with all the stakeholders while implementing project activities, as well as the inclusion of their specific interests and concerns. The SEP provides guidelines for stakeholder engagement and all third parties are expected to follow these guidelines while executing their activities. The SEP is a flexible plan and will be revised and updated by the PMU, if necessary, during the project's lifetime.

This proposed GCF project is fully aligned with national government priorities. It addresses key concerns about adaptation to climate change in Azerbaijan and builds on lessons learned and best practices for the provision of climate information services.

6 Stakeholder Engagement Plan (SEP)

The table below summarises stakeholder influence/interest in the project and outlines high-level proposed roles, key issues, and engagement strategy for each of the stakeholders.

Table 2: Stakeholder Engagement Plan

Stakeholder	Interest in the Project	Influence on the Project	Proposed role in the Project and Key Issues to Address	Engagement strategy
Ministry of Ecology and Natural Resources	MENR is one of the primary proponents of the project and will be one of the key driving stakeholders for the National Framework for Climate Services (NFCS) and the overall implementation of project activities.	<p>Directly engaging and collaborating with the NDA will be critical for guiding this project through implementation and ensuring effective reporting/management of GCF resources and the impact of the project.</p> <p>Further, as with the other ministries below, MENR will play a critical role leading the NFCS and other coordination mechanisms, while also being principally responsible for much of the new CIEWS technical capacity and deployments. Without MENR support and engagement, the project could not be implemented as envisioned.</p>	<p>MENR is the National Designated Authority in Azerbaijan and responsible for coordinating all projects with the GCF. The project will be working directly with the MENR through the NHMS, to design and implement the CIEWS interventions and will lean heavily on them to help coordinate the development of the national framework and platforms for CIEWS in Azerbaijan.</p> <p>Key Issues:</p> <ul style="list-style-type: none"> • Coordinating interdivisional response and planning for CIEWS • Supporting deployment of CIEWS interventions in Azerbaijan • Reporting to UNEP/GCF 	MENR will be the primary recipient for new technical capacity, technology deployment, etc. and will also play a leading role in the design and operation of the NFCS and User Interface Platform.

Other National Government Institutions (Ministries and relevant Departments)	<p>Most ministries have shown some level of interest in the project, particularly for new information streams to support their programming, but this interest will need to be sustained and catalysed into discrete action steps through the proposed NFCS and other engagement/coordination strategies.</p>	<p>The support of senior ministry officials will be essential to the success of the NFCS. They must be able to see tangible benefits for their departments from mainstreaming climate information into their policies and planning functions.</p> <p>The support of all ministry staff will be essential to the implementation of the NFCS. The mainstreaming of climate information into their work must address their own priorities for improving their services to communities.</p>	<p>National agencies and policymakers will be responsible for coordinating CIEWS and other relevant policies and programmes. These agencies and policymakers will include the MENR, Ministry of Emergency Situations, Ministry of Agriculture, NHMS, State Water Reserves Agency, Department of Ecology and Natural Resources under Parliament, etc.</p> <p>Key issues:</p> <ul style="list-style-type: none"> • Designing effective CIEWS frameworks, processes, and interventions in a coordinated manner • Ensuring proper training and coordination across sectors and ministries for optimal decision-making on CIEWS • Dissemination of lessons learned 	<p>Ministries will help to design and participate in the National Climate Outlook Forums (NCOFs) and will also collaborate on the development of the various policy frameworks and technical deployments envisioned in this project. Further, they will receive specialized training for leveraging new climate information streams and importantly for community engagement and gender mainstreaming.</p>
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General public including particularly “Last-Mile” communities	<p>Outside of the community groups and NGOs engaged as part of the development of the concept note and full proposal (see below), most of the general public is not aware of the project, so the project will need to work diligently to conduct focused engagement with the general public and particularly target communities for capacity building, to both raise awareness and demonstrate the value of the new climate information streams and services for improved decision-making and resiliency.</p>	<p>The general public and local communities will be the target audience for communication products and climate information. Further, they will be key partners in developing the community early warning schemes and preparedness plans.</p> <p>With that in mind, the true measure of success for this project will be how well CIEWS activities are supporting local communities and how well those local communities are able to utilize new resources and systems to improve their decision-making.</p>	<p>Project activities and the design/implementation of the envisioned CIEWS activities will need to be tailored to the needs and priorities of these communities in order to ensure uptake and long-term sustainability of adaptation outcomes planned by the CIEWS interventions.</p> <p>Key issues:</p> <ul style="list-style-type: none"> • Mediums of communication and access to information • Tailoring of messages and development of actionable communications products and information • Sustained buy-in, uptake, and utilization of CIEWS services 	<p>Mostly the general public and last mile users will be engaged through focused outreach and marketing of the new designed climate information products. This will include training on access and utilisation of the new CIEWS elements as well as deliberate feedback/surveying to ensure that the new products are actually meeting end user needs. Further, as discussed below, many of the CSO partners will be key to sustaining engagement with these users.</p>
Civil Society Organisations and networks	<p>Many organisations have already expressed interest in the project through the stakeholder engagement conducted as part of the development of the project proposal, particularly related to supporting their focused community efforts through community MHEWS.</p>	<p>These organisations are a major conduit to local communities and will be critical for reaching last mile users and will, therefore, exert strong influence on the design of CIEWS and particularly the community MHEWS.</p>	<p>For many communities, these groups represent existing convening structures and sources of information and social cohesion. Further, many of these organizations have been involved in developing and implementing past initiatives for climate change. Accordingly, they will need to be engaged throughout the design and implementation of the CIEWS systems to align ongoing activities and support full community engagement.</p> <p>Key issues:</p> <ul style="list-style-type: none"> • Alignment of CIEWS interventions to 	<p>These organizations will be engaged as part of the NFCS and NCOFs, but will also be close partners in working with local communities, particularly for the tailoring of information products, design of the user platform, and capacity building for community MHEWS.</p>

			<p>better support existing initiatives</p> <ul style="list-style-type: none"> • Engagement of vulnerable households and last-mile users • Sectoral decision-making and effective CIEWS communications 	
<p>Gender Organisations and networks both formal and informal</p>	<p>Given the inherent gender imbalance in hydromet institutions and the potential to effectively mainstream gender equity into CIEWS, these organisations would be interested in the project as an entry point for supporting broader gender mainstreaming in Azerbaijan.</p>	<p>The project has already been working with some of these organisations in the development of the Gender Action Plan (Annex 8) and will continue to broaden that engagement which will give these organizations opportunity to influence the design of certain activities, particularly training programs and curriculum and the tailoring of communication products. This influence is positive and critical for ensuring that this project is delivering CIEWS as an opportunity for all members of society.</p>	<p>It will be critical to continue to engage organisations working on gender equity and gender mainstreaming in Azerbaijan to ensure that the CIEWS activities are actually working to support progress towards gender equity, particularly through effective representation in coordination frameworks and ministries, opportunities for technical training and roles, tailored communications and information access, etc.</p> <p>Key issues:</p> <ul style="list-style-type: none"> • Tailoring of climate information services to support differentiated needs and priorities of men and women • Development of a targeted disaster risk awareness and education program for women 	<p>Engagement will be sustained through participation in the coordination mechanisms and NCOFs as well as through focused consultations and activities related to the implementation of the project's Gender Action Plan.</p>

Research institutions and other users of CIEWS services	<p>The major research institutions like the National Academy of Science, Khazar University, etc., are currently involved in various hydromet research activities and action. From initial engagement, the institutions are very interested in improving the quality of climate information available as well as the usability of that data to integrate into specific research outcomes.</p>	<p>These institutions will have sizable influence on the design of climate information services and the development of both the NFCS and the User Interface Platform because they are critical users of climate information and involved in the current hydromet efforts in Azerbaijan.</p>	<p>These institutions and users have high demand for improved CIEWS in Azerbaijan and are deeply involved in the existing limited efforts. The project will need to ensure that end-communications and systems are supporting this research and leveraging existing processes and capacity.</p> <p>Key issues:</p> <ul style="list-style-type: none"> • Integrating existing research efforts and CIEWS capacity to support the design and implementation of envisioned CIEWS interventions • Tailoring of communication products and platforms to support research efforts • Coordination on regional research 	<p>The institutions will be critical stakeholders in the National Climate Outlook Forum. This will be the primary mechanism for keeping the research institutions engaged, but they will also be integrated as part of the design of the user interface platform and the tailoring of climate information products.</p>
Regional/neighbouring country CIEWS organizations and institutions	<p>Given the complexity of natural and hydrometeorological systems in the region, developing improved CIEWS capacity in Azerbaijan can help to improve the effectiveness of other CIEWS efforts in the region, making this project of potentially high interest to regional/neighbouring country CIEWS institutions.</p>	<p>Neighbouring CIEWS institutions can provide critical insight on best practices, lessons learned, etc., for the design and operations of new CIEWS systems as well as the specific training and capacity building needs. Further, these institutions can enhance the project efforts by providing critical data inputs and visibility for issues like upstream flow, cross-border landslide risk, etc.</p>	<p>CIEWS information streams and systems from these other areas can help to inform the design of the envisioned system in Azerbaijan, particularly with regards to forecasting and tailoring of communication projects. Further, the data gathered by these institutions should also be utilized for projections in Azerbaijan, particularly for indicators like river discharge, which have significant cross-boundary implications.</p>	<p>Certain organizations like the WMO and regional CIEWS efforts like CORDEX will be engaged in the design and implementation of project activities and will also contribute to the envisioned coordination mechanisms and frameworks.</p>

			Key Issues: <ul style="list-style-type: none"> Sharing of data and cross-compatibility of information streams 	
Private Sector	<p>There are some private sector actors that are directly interested in the project, particularly the OJSCs, as discussed above. However, most private sector actors are not aware of the project at this juncture. Therefore, the project will work deliberately through planned activities to develop specific value chains and business models for climate information services to support private sector actors which will build sustained interest and new opportunities for informed decision-making.</p>	<p>As potential end-users, the private sector actors will have strong influence on the design and implementation of the climate information products and early warning systems. Their perspectives will need to be integrated and balanced with other considerations from other stakeholders.</p>	<p>Private sector actors will utilize CIEWS products to support planning and strategic decision-making. The project will need to ensure that end-communications and systems are supporting decision-making for specific business models and sectors.</p> <p>Key issues:</p> <ul style="list-style-type: none"> Engagement in development of the financial strategy for climate services Tailoring of climate analytics and information products to support decision-making 	<p>Engagement will be sustained through participation in the NCOF and co-production of sector-specific climate analytics.</p>

Other Donors	<p>To the extent that this project can create tangible actionable climate data to provide a stronger foundation for future projects, other donors will be interested in the outcomes of the project. Donors currently engaged in related projects in Azerbaijan and the surrounding region will also be quite interested initially and the project will work to ensure effective collaboration, dissemination of lessons learned, and channels for results outcomes.</p>	<p>Some other donors can have influence on the direction of CIEWS activities and particularly the tailoring of communication products, and so they should be involved in early discussions and kept apprised of progress.</p>	<p>Engagement with these groups will help to inform the design and implementation of programme activities and will ultimately be crucial for dissemination of programme success and lessons learned over time. These donors will also be future users of the CIEWS platforms and information, particularly in the design of future projects.</p> <p>Key Issues:</p> <ul style="list-style-type: none"> • Avoiding duplication and finding opportunities for collaboration and scaling up • Sharing lessons learned and best practices • Utilization of CIEWS products for future climate change projects 	<p>Engagement with other donors will focus on initial direct meetings and then continual updates as the project progresses. As information products are more clearly developed as part of project activities, the project will work deliberately to ensure that the new climate information products can help support other projects being implemented and developed.</p>
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7 Stakeholder Engagement Activity Timetable

The table below suggests a schedule for engaging formally with the principal stakeholders in the Project over its six-year term. It lists the formal interactions built into the Project with key partners in the public and private sectors as well as NGOs/communities and proposes the frequency and timing of those engagements where possible.

This structure will be reviewed and refined, as necessary, by the PMU and the NDA during the inception phase in consultation with the Project Steering Committee (PSC). Detailed timetables with identified stakeholders will also be agreed during the inception phase, and the means of recording and reporting on the outcomes of these interactions, to ensure their usefulness in managing activities and assessing their impacts.

Table 3: Stakeholder Engagement Activity Timetable

Stakeholder	Engagement purpose	Engagement technique	Engagement frequency	Responsible party
NDA, national government, community representatives, UNEP	Provision of strategic direction and policy guidance, monitoring and review of progress. Ensure cooperation among agencies / communities with Project activities.	Project Steering Committee Meetings	At least Annually	MENR
	Sharing of information and knowledge	Sharing information about the project scope, potential environment and social impacts (albeit minimal), duration, grievance redress mechanism (GRM) and the process for carrying out continuous consultations with affected people and facilitating their participation during project implementation	Year 1	MENR
National Government agencies	Sharing of information and knowledge	Sharing information about the project scope, potential environment and social impacts (albeit minimal), duration, GRM and the process for carrying out continuous consultations with affected people and facilitating their participation during project implementation	Year 1	MENR
	Consultation, establishment of baselines	Consultation Workshop to design the National Framework for Climate Services	Q1 Year 2	MENR

	Collaboration	Development of a national strategic plan and action plan for the National Framework for Climate Service	Year 2	MENR
	Collaboration	Endorsement of the national strategic plan and action plan for the National Framework for Climate Services	Year 2	MENR
	Sharing of information, knowledge and lessons learned	Launch of the National Framework for Climate Services	Year 3 onwards	MENR
	Sharing of information and knowledge	Development of the Integrated Urban Services Framework	Years 2-6	MENR
	Sharing of information, knowledge and lessons learned	Briefing for officials attending international meetings	As needed	MENR
	Sharing of information and knowledge	Briefing for Ministers through the National Climate Outlook Forum and use of its data to inform climate-resilient planning	Quarterly (Year 3 onwards)	MENR
	Evaluation	Facilitated workshop to evaluate the progress and impact of integration of climate information into government agencies' policies and functions through the NFCS	Year 6	MENR /MoES
	Consultation	Consultation Workshop for the National Climate Outlook Forum	Quarterly (Year 3 onwards)	MENR
	Sharing of information, knowledge and lessons learned	Establishment of the National Climate Outlook Forum	Quarterly (Year 3 onwards)	MENR

Private sector	Sharing of information and knowledge	Sharing information about the project scope, potential environment and social impacts (albeit minimal), duration, GRM and the process for carrying out continuous consultations with affected people and facilitating their participation during project implementation	Year 1	MENR
	Consultation	Consultation Workshop to design the National Framework for Climate Services	Year 2	MENR
	Collaboration	Endorsement of the national strategic plan and action plan for the National Framework for Climate Services	Year 3	MENR
	Sharing of information, knowledge and lessons learned	Launch of the National Framework for Climate Services	Year 3 onwards	MENR
	Consultation	Consultation Workshop for the National Climate Outlook Forum	Year 3	MENR
	Sharing of information, knowledge and lessons learned	Establishment of the National Climate Outlook Forum	Years 3-6	MENR
	Evaluation	Facilitated workshop to evaluate the uptake of climate information by the private sector	Year 6	MENR
NGOs, community groups and representatives	Sharing of information and knowledge, including with vulnerable sectors/groups	Sharing information about the project scope, potential environment and social impacts (albeit minimal), duration, GRM and the	Year 1	MENR

		process for carrying out continuous consultation with affected people and facilitating their participation during project implementation		
	Consultation	Consultation Workshop to design the National Framework for Climate Services	Year 2	MENR
	Collaboration	Endorsement of the national strategic plan and action plan for the National Framework for Climate Services	Year 2	MENR
	Sharing of information, knowledge and lessons learned	Launch of the National Framework for Climate Services	Year 3	MENR
	Consultation	Consultation Workshop to raise community MHEWS awareness and gather design information	Year 3	MENR
	Collaboration	Vulnerability assessments	Year 3	MENR
	Collaboration	Co-development of a socially inclusive and gender-responsive communication strategy	Years 2-3	Gender Expert
	Collaboration	Develop communication styles and means to make climate information understandable, develop local language climate terms	Years 2-6	MENR
	Evaluation	Facilitate workshop to evaluate the uptake of climate	Year 6	MENR

		information at the community level		
	Sharing of information, knowledge and lessons learned	National Climate Outlook Forum—presentation	Year 5/6	MENR

Appendix 1 – Online Kick-Off Webinar Project Development

Subject: Webinar Stakeholder Conference 24 September 2020 via Consultations for Green Climate Fund Funding Proposal: *Strengthening climate services and impact-based multi-hazard early warning to increase resilience to climate change threats and enhance livelihoods of the population in Azerbaijan*

Date: 24 September 2020

Background

Led by the Ministry of Ecology and Natural Resources of Azerbaijan Republic as the National Designated Authority (NDA) with UNEP serving as the GCF Accredited Entity, a climate early warning system project has been proposed for possible funding by the GCF. In 2019, a concept note for the project “Strengthening climate services and impact-based multi-hazard early warning to increase resilience to climate change threats and enhance livelihoods of the population in Azerbaijan” was developed. The concept note has been reviewed by the GCF Secretariat and is now ready for full proposal development, including undertaking background studies, analysis, and data gathering to support the proposal.

The Green Climate Fund (GCF) is a financial operating entity of the United Nations Framework Convention on Climate Change (UNFCCC) which is established to contribute to the collective efforts of the international community to combat climate change. The GCF plans to fund programmatic approaches that provide an opportunity for a paradigm shift in countries’ climate resilience and green economies, prioritizing a balanced approach between adaptation and mitigation.

The initial step in the development of the full project proposal is focused on developing the project feasibility study. This is the critical piece supporting the rest of the full proposal which includes building the analytical foundation for project interventions by providing clarity on priority climate hazards and deeper detail on in-country climate impacts and risks, developing multi-sectoral impact-based forecasting and particularly development of tailored adaptive responses/strategies, highlighting specific climate change and disaster costs and impacts to be avoided/reduced by project activities, as well as developing a full-value stream approach for MHEWS, conducting the economic and financial feasibility assessments of various approaches and technologies, and clearly articulating the business model and effectiveness of proposed interventions.

In order to familiarize different stakeholders in Azerbaijan with strengthening climate services and impact-based multi-hazard early warning to increase resilience to climate change threats and enhance livelihoods of the population in Azerbaijan and get their opinion on future needs for better project development, an initial stakeholder kick-off webinar was held to present the overall project concept and to be able to accurately include inputs from key stakeholders. Related agencies and stakeholders were contacted, and individual representatives were nominated. The nominated representatives provided their insights and voiced their support for further development of the project.

Stakeholder conference conducted on September 24, 2020

Given the current COVID-19 situation, an online webinar to discuss the project was undertaken on September 24, 2020, with participation of stakeholders listed below.

List of Organizations for Consultations

Stakeholder
1. Ministry of Ecology and Natural Resources
2. Ministry of Emergency Situations
3. Ministry of Agriculture
4. Ministry of Energy
5. Ministry of Transport
6. National Hydrometeorological Service
7. State Water Reserves Agency
8. EU Water Initiative+
9. National Academy of Science
10. Amelioration and Water Infrastructure Joint Company (OSC)
11. Azersu JSC
12. UNDP
13. World Bank
14. Red Crescent
15. Local Communities → REC Caucasus Baku affiliations → Others (State Committee on Urban Planning and Architecture, Scientific Institutes, Universities, Specialists, NGOs)

Mr. ***, Representative of NHMS and local expert in Azerbaijan welcomed participants of the meeting and asked representative of MENR, Mr. ***, to make an opening speech on behalf of the ministry.

Mr. *** in his speech informed attendants on goals of the meeting and importance of the project for Azerbaijan towards effective management of natural hydrometeorological events. He asked participants to actively participate in discussions and in future project work to make it more effective for the benefit of all in attendance.

Participants received the draft concept note for review as well as a list of questions for their Ministry/agency. Then, the Project Development Lead presented project activities as a power point presentation

The International Consultant hired by UNEP (Project Development Lead) started the meeting with greeting participants and expressing gratitude for having time to join the meeting. She also thanked representatives of stakeholder organizations for separate

meetings conducted with the project's hydromet expert during the week, and their fruitful contribution and feedback to the project development team's questions addressed to learn about the existing situation in the field of EW systems in the country and expectations of stakeholders from the project proposal.

The consultant later continued with the presentation where she went through the details of the project proposal covering various aspects as well as outcomes and expected results and outputs of the project. Simultaneous interpretation was provided for participants during the meeting.

The presentation provided was "GCF Full Proposal Development: Climate Information and Multi-hazard Early Warning for Increased Resilience in Azerbaijan".

The project team leader told participants about the expected content of the presentation through the slide titled "Meeting outline" where she mentioned that the topics are going to be presented will be about: a) Overview of Project Development Process and Tentative Timeframe b) Review and discuss current project outcomes c) Questions and Next Steps

Then she talked about the Overview of Project Development Process, stating that first there were initial consultations which included: i) Initial conversations on specific project interventions, status of key stakeholders, and anticipated challenges and proactive measures to address them and, ii) agreement on key stakeholders and level of involvement needed during project design. After that, there was a discussion of the feasibility study, which included the following:

a) Critical piece supporting the rest of the full proposal and requiring substantial time and effort to develop effectively; and

b) Focuses on building the analytical foundation for project interventions by providing clarity on priority climate hazards and deeper detail on in-country climate impacts and risks, developing multi-sectoral impact-based forecasting.

This process had been followed by an explanation of GCF Funding Proposal Sections where, as a critical component, will establish an effective climate rationale and help select project activities that are responsive and tailored to the specific barriers, needs, and opportunities in the project areas. Additionally, it was indicated that the project will need to respond to GCF comments.

The next stage was a discussion GCF Funding Proposal Annexes. These are 20 Annexes including the Feasibility Study. Further, there was a discussion of response to comments and required revisions to the proposal.

The consultant provided the tentative time frame for project development. The time frame was as following:

1. Initial Consultations covering September-October
2. Development of Feasibility study considered for September-January (5 months)

3. GCF Funding Proposal Sections – January-February (1-2 months)
4. GCF Funding Proposal Annexes - November-February (2-5 months)
5. Validation workshop – mid-February
6. Respond to UNEP Comments & Revise – January-February (1-2 months)
7. Submission to GCF planned for March 2021

The total timeframe is covering the period from August 2020 to March 2021.

The consultant continued describing the current Concept Note components and detailing the project output and activities. The consultant concluded the presentation with the next steps that are considered to be implemented in the coming months. The steps include:

1. Conducting stakeholder meetings with key technical staff
2. Finalization of feasibility study and circulate for comments/input
3. Development of full proposal and circulation for comments/input
4. Beginning co-finance discussions and commitments

The participants of the online meeting also thanked the presenter for the interesting and comprehensive presentation and stated their hope and belief that the project proposal will be accepted by the donor and implementation of the project will bring in the future a solid benefit in the field of development of an Early Warning system in Azerbaijan.

Mr. *** who is an expert on legal and institutional development gave feedback stating that the legislation and regulations in this field were mostly adopted in early nineties of the last century and there is a demand for review and update of several laws and sub law documents in this field. Thus, implementation of the project can be a very good opportunity to contribute to the development of legal and institutional aspects of such kind of activities in the country.

The proposal of the expert was taken into account by the team leader and noted for further actions.

The organizers expressed their gratitude to participants and announced the closure of the meeting with the hope to meet with stakeholders again and meet in person if the situation with pandemic is solved.

Appendix 2 – Technical Stakeholder Meetings

A series of stakeholder meetings were held virtually to seek inputs for the project proposal “Strengthening climate services and impact-based multi-hazard early warning to increase resilience to climate change threats and enhance livelihoods of the population in Azerbaijan”.

The main topics of the discussions were about asking stakeholders what role their organisations play within the current early warning system, what meteorological/climatological hazards or risks do they/their organisation/department respond to, monitor or work on, are they the mandated authority of this warning etc.

After getting familiar with activities of each of stakeholder discussions, the following topics were discussed:

1. Type of monitoring system in place to identify potential warnings for the identified hazards?
2. Do they rely on any other agencies;
 - a. for data that they need for warnings?
 - b. to issue warnings that they may need to know about to fulfil their function?
 - c. Is the data they receive, generated in real time, near-real time or otherwise? What is the frequency of the information updates? Are there errors in the data they receive?
3. Do other agencies rely on them for data or warnings?
 - a. How is this data shared and is it currently effective?
 - b. Is the data they make, generated in real time, near-real time or otherwise? What is the frequency of the information updates? Are there any errors in the data they generate?
4. Once a warning is needed;
 - a. Who do they share this information with? Who is the targeted beneficiary of the warning?
 - b. How do they share this information?
 - c. In what media format (radio, tv, email, portal, social media)?
5. Have they assessed the structure of warnings you issue?
 - a. with the locally affected stakeholder agencies
 - b. with affected communities?
 - c. Do they ever get any feedback as to the usefulness of the warning?
6. Will there be any changes made to their system in the foreseeable future, and if yes, what changes are anticipated?
7. Is their capacity sufficient in terms of;
 - a. legislation to help with mandated function?
 - b. staff being trained to the required technical capacity to issue warnings effectively?
 - c. the national monitoring infrastructure to compile needed data and issue warnings?
 - d. national relationships with other agencies on which they rely?
 - e. international relationships with governments and private agencies to help with warnings
8. What, if anything would they like to improve to better issue warnings for the people of Azerbaijan?

In addition, depending on types of activities stakeholders engaged specific questions related to their expertise were discussed with each of the stakeholders.

NATIONAL HYDROMETEOROLOGICAL SERVICE, MENR

The consultant had consultations with below representatives of National Hydrometeorological Service (NHMS) of MENR, Azerbaijan:

- Ms. ***, Director of National Hydrometeorological Service of MENR
- Ms. ***, Director of Agrometeorology Center of National Hydrometeorological Service of MENR
- Ms. Gulshad Mammadova, Director of Hydrometeorological Forecasts Center of National Hydrometeorological Service of MENR
- Mr. ***, Director of Hydrology Center of National Hydrometeorological Service of MENR

After briefly informing representatives of Hydromet about project activities and its goals, the consultant said that he would like to discuss with them below questions:

1. What is the role of your organisation within the risk knowledge component?
Does your organisation undertake risk assessment for any hazard?
2. What monitoring and warning procedures does your organisation have?
3. What monitoring capacities does your organisation have?
4. What forecasting capabilities does your organisation have? Meteorological?
Hydrological?
5. What warning criteria does your organisation have?
6. What sort of warnings do you issue and who will get the warnings? Private
Citizens or agencies?
 - a. Floods?
 - b. Drought?
 - c. Storms?
 - d. Hail?
 - e. Landslides
7. What are the most critical stakeholders with which you work?
8. Have your organization implemented a Common Alerting Protocol?
9. Issuing warnings
 - a. How do you issue early warnings?
 - b. Are these warnings issued per community or of a region?
 - c. How timeous are your warnings?
 - d. Is there any ground truthing to warnings once issued?
10. Relationships
 - a. What other agencies do you work with? And how effective are these relationships?
 - i. Do you receive data from them or do you give data to them, or both?
 - b. Have there been requests for
 - i. more localized warnings?
 - ii. warnings further in advance?
 - iii. warning requests tailored for specific sectors such as agriculture, water or energy
11. What are the biggest hinderances if any to NHD to being able to give accurate and timeous early warnings?
12. Capacity
 - a. Where do you get you forecasts from?

- b. How many meteorological stations are currently active and are they distributed spatially to cover the majority of Azerbaijan or is there a focus towards the populated areas?
 - c. Do you receive real-time data from elsewhere in the region?
 - d. Is the issuing of warnings getting easier or more difficult?
13. What feedback have you received from various stakeholders and the general public to issued warnings?
 - a. Do they have a way to engage with you?
 - b. Do people generally understand your warnings?
14. Is your organization involved in the response to disasters?

Ms. *** informed the consultant that NHMS is responsible for the collection of hydro-meteorological data in Azerbaijan. As a result, they have a network of meteorological stations and post, and also hydrological stations. Most hydrological stations are manual, while the meteorological stations are both manual and automatic. There is a need to ensure the resilience of automatic stations.

It was also noted that NHMS is also responsible for the operation of the weather radars in Azerbaijan. At the moment there are several old (Soviet-time) MRL-5 radars that are still operational. However, these radars required urgent repairs and their status cannot ascertain. Recently, three new radars have been obtained, but it has not been possible to deploy them as of yet due to the COVID-19 situation.

Currently NHMS is the forecasting of the different hazards. It should be noted that this forecasting is undertaking at the moment using the experience of the technical staff in NHMS, and no modelling procedures are followed.

It was also noted that at the moment no NWP (numerical weather prediction) model is implemented in Azerbaijan. The meteorological forecasting information is based on information received from other centres, including information (no data) from the European Centre for Medium Weather Forecast (ECMWF).

MINISTRY OF ECOLOGY AND NATURAL RESOURCES

The consultant has had consultations with below representatives of Ministry of Ecology and Natural Resources of Azerbaijan:

- Yashar Kerimov, Head of International Agreements Unit, MENR
- Rasim Sattarzadeh, Head of Ecological Policy Division

After briefly informing representatives of MENR about project activities and its goals, the consultant indicated that he would like to discuss with them below questions:

1. Does your organisation undertake risk assessments?
2. What sort of warnings do you issue and who will get the warnings? Private Citizens or agencies?
 - a. Floods?
 - b. Drought?
 - c. Storms?
 - d. Hail?
 - e. Landslides
3. Is there a common warning criterion agreed with other stakeholders?
4. Do you undertake forecasting activities? Such as drought forecasting?
5. What are the most critical stakeholders with which you work?
6. Issuing warnings

- a. How do you issue early warnings?
 - i. Are the warnings hands on through local community engagements or
 - ii. more indirectly via SMS or radio or other?
 - b. Are these warnings issued per village or of a region?
 - c. How timeous are your warnings?
 - d. Is there any ground truthing to warnings once issued?
7. Relationships
- a. What other agencies do you work with? And how effective are these relationships?
 - i. Do you receive data from them or do you give data to them, or both?
 - b. Have there been requests for
 - i. more localized warnings?
 - ii. warnings further in advance?
 - iii. warning requests tailored for specific sectors such as agriculture, water or energy
8. Capacity
- a. Where do you get you forecasts from?
 - b. How many meteorological stations are currently active and are they distributed spatially to cover the majority of Azerbaijan or is there a focus towards the populated areas?
 - c. Do you receive real-time data from elsewhere in the region?
 - d. Is the issuing of warnings getting easier or more difficult?
9. What feedback have you received from various stakeholders and the general public to issued warnings?
- a. Do they have a way to engage with you?
 - b. Do people generally understand your warnings?
10. Is there an agricultural bulletin disseminated? In that case, what information is included? How is this disseminated?
11. Is your organization involved in the response to disasters?

Mr. *** noted that the Ministry of Ecology and Natural Resources is one of the key stakeholders within the framework of this proposal, especially because of the role that the National Hydro-Meteorological Services of MENR plays in the EWS in Azerbaijan. Several consultations have been held with the NHMS in general reflects the opinion of MENR. Taking this into account at this stage no more consultations are considered necessary with the Ministry, considering the information gathered from the hydro-meteorological service.

WATER RESOURCES STATE AGENCY (WRSA) OF MINISTRY OF EMERGENCY SITUATIONS (MoES)

The consultant has had consultations with representative of Water Resources State Agency of MoES of Azerbaijan Republic Mr. ***, Head of Division of WRSA.

After briefly informing Mr. *** about project activities and its goals, the consultant told him that he would like to discuss with him below questions related to WRSA:

1. What is the role of your organization within the EWS and climate information system?
2. Does your organization undertake risk assessments? For what hazards?

3. What are the capacities of your organization in the monitoring and warning component?
 - a. How many monitoring stations? Hydrological?
 - b. Are there any hydrological forecasting models implemented?
 - c. Is there a warning criteria and protocol agreed?
4. What is the role of your organization in the communication and dissemination of warnings?
5. Do you receive information from other stakeholders? National? Regional?
6. Is your organization involved in the response to disasters?

As Mr. *** presented MoES as well, therefore in addition to the questions below he has been asked to talk in relation to activities of MoES.

1. What is the role of your organization within the EWS and climate information system?
2. Does your organization undertake risk assessments? For what hazards?
3. Does your organisation undertake any monitoring and warning activities?
4. Does your organisation receive any warning from other stakeholders? National? Regional?
5. In that case, how is this information received?
6. Do you think this information communication can be improved? How?
7. Is your organisation involved in the communication and dissemination of warnings?
 - a. How are warnings disseminated?
 - b. Are there different warning depending on the receiver?
 - c. Are there redundant communication means?
 - d. Is there a follow-up of the warnings?
 - e. Is there a Common Alerting Protocol implemented?
8. Is your organisation involved in the response?
 - a. Has your organisation received any training in response activities?
 - b. Do you have any training requirements?
 - c. Are there evacuation routes and centres deployed?
 - d. Are there Community Emergency Response Plans implemented?

Mr. *** informed that WRSA, under the Ministry of Emergency Situations (MOES), has the main responsibility of maintaining and controlling all the reservoirs in Azerbaijan, including water resources planning. There are nine reservoirs in Azerbaijan under this Agency, and in order to ensure the correct operation of these reservoirs, the Agency has implemented a modelling framework based on HEC-ResSim. This modelling software is used to model the reservoir operations at all the significant reservoirs of Azerbaijan for a variety of operational goals and constraints. The software simulates reservoir operations for flood management, low flow augmentation and water supply for planning studies, detailed reservoir regulation plan investigations, and real-time decision support. This modelling framework has been in development for the last 5 years. The SWRA has also several monitoring stations deployed in the Greater Caucasus area and in western Azerbaijan in the Kura Basin, more specifically 9 automatic hydrological stations and 3 automatic weather stations, which are being used for forecasting purposes within the HEC-ResSim model. The information from these stations is being shared with the NHD, and the SWRA is also getting meteorological forecasting information from the hydromet department. It was raised during the consultation that the level, detail and accuracy of the forecasting information provided by the NHD could be improved.

It should be added that the SWRA commented on the responsibilities of the MOES regarding EWS, especially regarding the communication and response components of an EWS. The MOES, as well as other ministries and stakeholders, gets daily information from the NHD, in the form of a bulletin. Whenever information is received about a forecasted disaster, this information is disseminated from the central MOES to the 9 regional centres, and from there is disseminated to the local population whenever possible. It should be noted, however, that the information received about warning is very general, at regional level, and it is not very useful for EWS (response) purposes.

MINISTRY OF AGRICULTURE

The consultant has had consultations with representative of Ministry of Agriculture Mr. ***, Head of Division

After briefly informing Mr. *** about project activities, the consultant listed questions that he was interested (similar to those that were asked from MENR)

Mr. *** informed that the Ministry of Agriculture is responsible for providing information to farmers, and also for collecting information regarding the state of this sector in Azerbaijan.

During the consultations with the representative of the Ministry of Agriculture, it became apparent that presently, the Ministry of Agriculture (or the department participating on these consultations) is not receiving any information regarding early warnings for any hazard. As it will be detailed below, the NHD (National Hydrometeorological Department) prepares daily bulletin with observational and forecasting information and it is disseminated to most stakeholders. This bulletin is not received by this Ministry either.

Nonetheless, it should be added that based on the consultant opinion, the Ministry of Agriculture staff consulted on this, did not fully understand the benefit of EWS information, because it was not considered interesting to receive this information either.

The Ministry of Agriculture is deploying an electronic system for the dissemination of information to farmers. It was suggested that information about early warning can be disseminated through that system, although considering the timely component of an early warning system that is not advisable. Nonetheless, risk information can be disseminated through that mean, and even the information about drought warnings.

It should be noted, however, that it was agreed that information for farmers from an EWS perspective would be useful for:

- Planning purposes for farmers. Two examples were agreed on:
 - o A warning for flooding may benefit farmers, allowing them to plan accordingly and protecting their crops as much as possible.
 - o A warning for droughts may also benefit some farmers, considering alternative crops depending on the water availability and the demand of certain types of crops.
- Insurance for farmers is being included at the moment in Azerbaijan, and therefore having information about impending disasters would help too. It should be noted that in some countries, insurance payments are undertaken according to the information provided by EWSs.

NATIONAL ACADEMY OF SCIENCE

The consultant had consultations with representative of National Academy of Science Prof. ***, Head of Sector in Hydrology Division of Geography Institute

After briefly informing Prof. *** about project activities, the consultant discussed with him science basis of project activities.

Prof. *** said that he presents the Institute of Geography of the National Academy of Science and due to the absence of a research hydro-meteorological institute in Azerbaijan, this institute is responsible for the assessment and analysis of the hydro-meteorological data from an academic point of view.

Even if this institute and the Academy of Science does not have a direct role or responsibility within the current institutional set-up for the Early Warning System in Azerbaijan, their role should be noted from the risk knowledge point of view. These are the current activities undertaken by this institute:

- Yearly, a hydro-meteorological summary book is published, outlining the main results from the past year.
- Climate change assessments are undertaken, describing how the climate change will affect disasters and other hydro-meteorological parameters.
- The impact of disasters, from an economic point of view is also discussed in these annual books.

It should be noted, therefore, that the main activity of this institute is to undertake research regarding disasters and their impact. The creation of stronger links between practitioners (namely NHD and MOES) and research institutes was recommended. The main reason for this being the lack of accuracy provided by some of the forecasting information provided by NHD.

URBAN PLANNING COMMITTEE

The consultant discussed with personnel from the Urban Planning Committee Mr. *** issues related to the role of early warning activities in Urban Planning processes.

It should be noted that no significant or relevant information was obtained through this consultation. This committee does not use widely EWS information.

AZERSU OJSC

The consultant had consultations with Representative of Azersu Open Joint Stock Company (Azersu) Prof. ***.

After briefly informing Mr. *** about project activities, the consultant discussed with him issues related to general aspects of early warning activities in Azerbaijan

Prof. *** told that Azersu Open Joint Stock Company (Azersu) has as their main responsibility the provision of both clean water and wastewater in the territory of Azerbaijan. Therefore, the water distribution and sewage network are under its responsibility.

Azersu has frequent contacts with both the SWRA and the NHD, although not in a daily basis. The main interest of Azersu on the implementation of an EWS would be in the operational information regarding flood and drought warnings so Azersu can plan accordingly. At the moment Azersu is just receiving the daily bulletin from NHD and some information if a disaster is predicted, although the accuracy of these predictions is on the low side.

AMELIORATION AND WATER MANAGEMENT OJSC

The consultant has had consultations with below representatives of Amelioration and Water Farm JSC of Azerbaijan:

- Mr. ***, Head of Division

- Ms. ***, Head of Division

After briefly informing representatives of Amelioration JSC about project activities and its goals Mr. Juan Fernandez said that he would like to discuss with them questions related to disaster management and early warning practices in Azerbaijan and role of Amelioration JSC in this work.

Mr. *** informed that The Amelioration and Water Management Open Joint Stock Company (AWM) has the responsibility of manage and distribute water supplies to various sectors, monitor efficient use, undertake mitigation measures against flooding and provide technical development advice in the water management area to other stakeholders.

The mitigation measures that AWM undertakes in the flooding field should be noted, especially considering the technical design for this. This is because, based on international practices, the technical design of flood mitigation measures is undertaken using a flood modelling approach, including hydrological and hydraulic modelling strategies. These capacities would be very valuable in the implementation of this project, especially because there is no stakeholder with these capacities in Azerbaijan. It is uncertain, however, how these measures are designed, although a technical department in AWM is in charge of that. Also, some of these measures are undertaken within the framework of project and developed by international consultancies. Therefore, it is believed that these capacities are limited in AWM.

Nonetheless, it should be noted that AWM showed great interest in the project and it was the stakeholder providing more feedback from a user point of view. Actually, AWM has prepared project proposals for the deployment of EWS stations in the North-East of Azerbaijan, although this project has not been approved by the government. The benefit of the implementation of a Multi-Hazard was identified for landslides, avalanches, droughts and floods.

It should be noted that the relationship with neighbouring countries was raised as a very significant issue. Even if official and formal agreements exist with the Russian Federation and Iran, it is evident that, from a water management point of view, the cooperation with Georgia would be critical, and considering also that cooperation with Armenia is not possible at the moment for political reasons. This will be addressed further below, but the cooperation with Georgia should be increased in a number of issues.

DEPARTMENT OF ECOLOGY AND NATURAL RESOURCES UNDER PARLIAMENT

The consultant had consultations with the head of Department of Ecology and Natural Resources under Parliament Mr. ***.

After briefly informing Mr. *** about project activities, the consultant discussed with him mainly questions related to legal-institutional aspects of early warning activities in Azerbaijan

Mr. *** said that The Department of Ecology and Natural Resources under Parliament has the main responsibility of drafting and preparing regulations, policies and laws within the ecological, environmental and emergency field. One of the key things at this stage is that the relevant legislation for EWS and disaster risk management is more than 20 years old, and therefore this will need to be reviewed. One important aspect related to the possible implementation of a MHEWS that would have to be assessed during the project implementation, considering the opinion of this department, is the institutional arrangement for the MHEWS and more especially the relationship and link among all the different key stakeholders for this, mainly MOES and NHD.

REC CAUCASUS

The consultant had consultations with Director of REC Caucasus Ms. ***.

After briefly informing Ms. *** about project activities, the consultant discussed with her mainly below questions related to early warning activities in relation to communities at risk

1. Is there a community emergency response plan implemented? In that case:
 - a. Is there a community group formed?
 - b. Is the community aware of the main areas at risk for different hazards?
 - c. Is the community prepared to face disasters?
 - d. Are there evacuation routes and centres deployed?
2. Can communities list the last two/three disasters that have affected their community?
3. What is the main livelihood in this area? (agriculture (crops/livestock), business, tourism, mining, forestry, ecosystem reliant activities?)
4. What are the day-to-day activities?
School, Working, Travel, Communications, Media consumption (radio, TV, internet, cell phone), Food/water gathering/buying, Fuel gathering/buying.
5. How much does the weather affect you and you community? And do you know about climate change
 - a. Droughts
 - b. Temperature / heatwave
 - c. Flooding
 - d. Landslides
 - e. Hail
 - Impacts of each including health, food/water security, livelihoods, resource gathering/buying.
 - Do they have you got any stories about how these have had an impact their community?
 - Are these happening often and are they getting worse?
 - Did you know these were coming?
 - Do they have any form of early warning?
 - Do they trust the warnings?
 - How far in advance would they want a warning?
 - How have these impacted their day-to-day activities?
 - Would knowing these impacts are coming help them prepare?
 - How would they prefer to get these early warnings if at all?
 - What else would help mitigate these impacts?

Ms. *** in turn informed that REC Caucasus is an NGO undertaking community work in some areas in Azerbaijan, especially in the Greater Caucasus. They have undertaken several community-based initiatives, and their work in the formation of community groups should be highlighted. They have also provided resources for wild-fires response.

Regarding above questions she noted that unfortunately most of mentioned activities aren't carried in Azerbaijan and therefore if project helps with this it may play significantly important role in community related disaster management

KHAZAR UNIVERSITY

The consultant held discussions with the Community Disaster expert in the Khazar University Mr. ***.

Mr. ***informed that he has a network of communities where community-based initiatives have been undertaken. In those communities, groups have also been formed. This was undertaken within the framework of a UNICEF project, and these communities were identified and selected because they were facing several disasters and because community representatives showed interest in the implementation of disaster management activities.

Appendix 3 – Community Surveys

Saribash Village

Name and address of community.....Saribash village (Azerbaijan Republic, Gakh raion, Saribash village)

Contact person.....***

Contact phone, e-mail.....***

Topics

- **Historical disaster events (please also complete the table and map below)**

- When was the last disaster event that affected your community?

02.08. 2020

- What did it happen?

Due to heavy rains, mudflows were observed in Kurmukchay and other mountain rivers

- How was the community affected?

Road connection with the district is cut off. Mountain roads, paths and the bridge were washed away, the village's spring water sources were destroyed and the water pipes were filled with soil and etc. There was no road connection for about 43-45 days. Food was transported by horses.

- **Current practices**

- What are the current community practices during disaster events?

Not to be in the river valleys where the mudflow waters are expected to pass, to take cars and other equipment from there, not to keep horses and cattle in the rivers.

- Is disaster risk information disseminated through the community?

Yes

- Are community members aware of the disaster risk?

No

- Does your community receive any information regarding an impending disaster event?

No

- If yes, how was the information received?

- Is the information received by all the different community groups? Do women, children, the elderly and disabled have the same access to this information?

No

- **Monitoring**

- Do you think it is a good idea to locate monitoring equipment at your community?
- Do you think this will be maintained?

- **Communication Devices**

- What communication means are currently used by the community?

Landline and mobile phone connection
- Considering the existing communication means, what do you consider would be the most effective communication mean(s)?

Mobile phones (but, unfortunately, there are no receivers in the village and mobile phones do not work everywhere in the village).
- Who do you think should be the contact(s) person for your community?

- **Response**

- How was the response of your community during the last disaster event?

Bridges must be built. Roads need to be overhauled
- Are there Community Response Plans implemented?
- Are there Evacuation Centres?

No
- What would you think could be the best location for the evacuation centre in your community?

There is no need for evacuation, only roads need to be restored.
- Are there evacuation routes?

No
- Are the special needs of the women, elderly people, people with disabilities and children considered and addressed?

What organisation should be responsible to issue the warning	What means should be used to warn the community members	How to warn and who is warning?	What infrastructure and means need to be mobilised?	Any other idea?
				Road infrastructure and two bridges must be built.

Date of the Disaster	Previous Meteorological conditions	Affected areas	How did it affect?	What measures were taken? Male /Female	What measures were taken by the community?	How did the local government help?	How did the central government help?	What kind of support would have you liked?
02.08.2020 at 23:30	Sunny and cloudy, calm weather	Saribash village	Road connection with the district is cut off. Mountain roads, paths and the bridge were washed away, the village's spring water sources were destroyed and the water pipes were filled with soil and etc. There was no road connection for about 43-45 days. Food was	-	They built wooden and stone dams on the destroyed road, tried to clean water sources and pipes.	They tried to restore the roads	1 bulldozer allocated (New Holland)	Bridges must be built. Roads need to be overhauled

			transported by horses.					
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Gonagkend Nature friends LLC, Guba raion

Name and address of community.....**Gonagkend Nature friends LLC, Guba raion**

Contact person.....***

Contact phone, e-mail.....***

Topics

- **Historical disaster events (please also complete the table and map below)**

- When was the last disaster event that affected your community?

July 2019

- What did it happen?

As a result of the river adventure, the soil cover and trees of mountains, valleys and forests were seriously damaged.

- How was the community affected?

It mainly affected the human factor both materially and morally. Thus, people's backyards were flooded, and cattle were washed away.

- **Current practices**

- What are the current community practices during disaster events?

As we know during natural disasters, there is no experience that can prevent a disaster. However, it is known from world experience that natural dams are being built in mudflow-prone areas. Thus, planting trees along the coast can prevent a natural disaster, at least in part.

- Is disaster risk information disseminated through the community?

Yes

- Are community members aware of the disaster risk?

No in advance. But it is possible to take preventive measures.

- Does your community receive any information regarding an impending disaster event?

No

- If yes, how was the information received?
- Is the information received by all the different community groups? Do women, children, the elderly and disabled have the same access to this information?

No

- **Monitoring**

- Do you think it is a good idea to locate monitoring equipment at your community?

Yes, it is very good idea

- Do you think this will be maintained?

Yes

- **Communication Devices**

- What communication means are currently used by the community?

Mainly using phone, TV and internet

- Considering the existing communication means, what do you consider would be the most effective communication mean(s)?

Mobile phone

- Who do you think should be the contact(s) person for your community?

People

- **Response**

- How was the response of your community during the last disaster event?

It was not unequivocally welcomed

- Are there Community Response Plans implemented?

Not satisfactory

- Are there Evacuation Centres?

No

- What would you think could be the best location for the evacuation centre in your community?

Active areas close to natural disaster

- Are there evacuation routes?

No

- Are the special needs of the women, elderly people, people with disabilities and children considered and addressed?

Yes

What organisation should be responsible to issue the warning	What means should be used to warn the community members	How to warn and who is warning?	What infrastructure and means need to be mobilised?	Any other idea?
	Mobile phone	human factor	The most important is the human factor in the use of heavy equipment	No

Date of the Disaster	Previous Meteorological conditions	Affected areas	How did it affect?	What measures were taken? Male/Female	What measures were taken by the community?	How did the local government help?	How did the central government help?	What kind of support would have you liked?
July 2019	Lightning	Mountains, valleys, forests and coastal settlements	most importantly, soil erosion occurred	Voluntary initiative of the villagers	They were mobilized voluntarily	Mobilized people	Organization of heavy equipment	Realisation of evacuation measures

Hirkan National Park, Lankaran raion, Burcali village.

Name and address of community..... **Hirkan National Park, Lankaran raion, Burcali village.**

Contact person..... ***

Contact phone, e-mail..... ***

Topics

- **Historical disaster events (please also complete the table and map below)**

- When was the last disaster event that affected your community?

21.08.2019

- What did it happen?

Forest fires

- How was the community affected?

Environmental pollution, destruction of flora and fauna

- **Current practices**

- What are the current community practices during disaster events?

Pre-arrange firefighting equipment before fires and other incidents, provide community members with binoculars, place warning and information boards in the area, conduct regular monitoring, hold meetings with villagers and organize their working together with community and get contact numbers.

- Is disaster risk information disseminated through the community?

Regular meetings are held with the local population on the risk of disasters and awareness-raising activities are carried out.

- Are community members aware of the disaster risk?

Yes

- Does your community receive any information regarding an impending disaster event?

Yes. Meteorological warnings are issued regularly

- If yes, how was the information received?

Obtained on the basis of yegers, scientists, villagers and hydrometeorological data

- Is the information received by all the different community groups? Do women, children, the elderly and disabled have the same access to this information?

Yes, received and transmitted.

- **Monitoring**

- Do you think it is a good idea to locate monitoring equipment at your community?

Yes, it is good idea

- Do you think this will be maintained?

Yes

- **Communication Devices**

- What communication means are currently used by the community?

Partially using mobile phones.

- Considering the existing communication means, what do you consider would be the most effective communication mean(s)?

The presence of radiation

- Who do you think should be the contact(s) person for your community?

Guards (Mühafizə yegerləri), villagers and volunteers.

- **Response**

- How was the response of your community during the last disaster event?

It was positive

- Are there Community Response Plans implemented?

- Are there Evacuation Centres?

No

- What would you think could be the best location for the evacuation centre in your community?

City centres, Sea coasts

- Are there evacuation routes?

No

- Are the special needs of the women, elderly people, people with disabilities and children considered and addressed?

The population is provided with firewood.

- **Fill in the table, please**

What organisation should be responsible to issue the warning	What means should be used to warn the community members	How to warn and who is warning?	What infrastructure and means need to be mobilised?	Any other idea?

Rural Executive Representatives, Municipalities, Hirkan National Park	Phone, cars and radiations	Mobile connections, contact persons	Gas-66 cars, DT-25 tractors, water tanks, water hoses, water pumps, shovels, horses, helicopters	
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Date of the Disaster	Previous Meteorological conditions	Affected areas	How did it affect?	What measures were taken? Male/Female	What measures were taken by the community?	How did the local government help?	How did the central government help?	What kind of support would have you liked?
21.08.2019	Warm weather	Forest area	Extinction and relocation of large numbers of fauna and flora species	The whole village population was mobilized	Concentration of firefighting tools	MES staff was mobilized, helicopters were sent and assistance was provided by Internal Troops	All forces were mobilized	

Guba raion, Khinalig village

Name and address of community..... **Guba raion, Khinalig village**

Contact person..... ***

Contact phone, e-mail..... ***

Topics

- Historical disaster events (please also complete the table and map below)

- When was the last disaster event that affected your community?

13-14. 07.2020

- What did it happen?

Heavy rains destroyed the village's internal roads. As a result of rising water in the river, the water line to the village was broken. Bostankesh settlement was flooded

- How was the community affected?

Houses were flooded and filled with gravel. Citizens yards were flooded with silt, and chickens were destroyed. Drinking water lines were out of order, and the villagers suffered material and moral damage

- **Current practices**

- What are the current community practices during disaster events?

Leaving their homes when the mudflow comes, informing each other, nothing else

- Is disaster risk information disseminated through the community?

in some cases

- Are community members aware of the disaster risk?

No

- Does your community receive any information regarding an impending disaster event?

No

- If yes, how was the information received?

Only when happening disaster

- Is the information received by all the different community groups? Do women, children, the elderly and disabled have the same access to this information?

Yes

- **Monitoring**

- Do you think it is a good idea to locate monitoring equipment at your community?

Yes

- Do you think this will be maintained?

Yes

- **Communication Devices**

- What communication means are currently used by the community?

Home phones, Azercell, Bakcell and Nar mobile stations operates in area and villagers use them.

- Considering the existing communication means, what do you consider would be the most effective communication mean(s)?

Communication means

- Who do you think should be the contact(s) person for your community?

Municipality

- **Response**

- How was the response of your community during the last disaster event?

Non-serious approach to their work of local authorities

- Are there Community Response Plans implemented?

No

- Are there Evacuation Centres?

No

- What would you think could be the best location for the evacuation centre in your community?

Safe zone in the village area

- Are there evacuation routes?

No

- Are the special needs of the women, elderly people, people with disabilities and children considered and addressed?

What organisation should be responsible to issue the warning	What means should be used to warn the community members	How to warn and who is warning?	What infrastructure and means need to be mobilised?	Any other idea?
Hydrometeorology stations	by establishing a telephone connection	By private telephone	Equipment used during the accident, heavy techniques, work force.	To have a heavy technique, trained work force and ordinary elected guide

Date of the Disaster	Previous Meteorological conditions	Affected areas	How did it affect?	What measures were taken? Male/Female	What measures were taken by the community?	How did the local government help?	How did the central government help?	What kind of support would have you liked?
13-14.07.2020	Foggy and rainy weather	Roads, homes, water lines, roads used in agriculture, yards and hayfields	It had a devastating effect	Roads partially repaired, one part of the flooded river cleaned. Remained unfinished due to lack of equipment	They could not take any action	Water lines were restored	Equipment was sent to the scene of the disaster; some work was done	To evacuate people, involve techniques and take advanced measures in the disaster area

Shaki Nature Friends LLC. Shaki raion Bash Kaldak village

Name and address of community..... **Shaki Nature Friends LLC. Shaki raion Bash Kaldak village**

Contact person..... *****, ***.**

Contact phone, e-mail..... *******

Topics

- **Historical disaster events (please also complete the table and map below)**

- When was the last disaster event that affected your community?

24.06.2010.

- What did it happen?

Mudflow

- How was the community affected?

Infrastructure was severely damaged

- **Current practices**

- What are the current community practices during disaster events?

Everyone got out of the situation at the expense of individual capabilities.

- Is disaster risk information disseminated through the community?

No

- Are community members aware of the disaster risk?

Yes

- Does your community receive any information regarding an impending disaster event?

In certain amount

- If yes, how was the information received?

Through the media

- Is the information received by all the different community groups? Do women, children, the elderly and disabled have the same access to this information?

By relatives

- **Monitoring**

- Do you think it is a good idea to locate monitoring equipment at your community?

Yes

- Do you think this will be maintained?

Perhaps

- **Communication Devices**

- What communication means are currently used by the community?

Telephone, internet

- Considering the existing communication means, what do you consider would be the most effective communication mean(s)?

Telephone

- Who do you think should be the contact(s) person for your community?

There is no specific person

- **Response**

- How was the response of your community during the last disaster event?

Silence

- Are there Community Response Plans implemented?

No

- Are there Evacuation Centres?

No

- What would you think could be the best location for the evacuation centre in your community?

It is impossible to think of an exact place

- Are there evacuation routes?

No

- Are the special needs of the women, elderly people, people with disabilities and children considered and addressed?

Individually

What organisation should be responsible to issue the warning	What means should be used to warn the community members	How to warn and who is warning?	What infrastructure and means need to be mobilised?	Any other idea?
Municipality, Executive Office and Ministry of Emergency Situations.	By all possible methods.	Without panicking people.	Technology and people	Since natural disasters are different, dealing with them requires different resources and equipment.

Date of the Disaster	Previous Meteorological conditions	Affected areas	How did it affect?	What measures were taken? Male/ Female	What measures were taken by the community?	How did the local government help?	How did the central government help?	What kind of support would have you liked?

21.05.1999 Hail and mudflow	Silent	Bash Kaldak, Oraban and Bash Kunchut villages	Farms were severely damaged	No action was taken. Everyone individually	None	Infrastructure rehabilitation after the disaster.	Nothing	More support.
05.06.2003 Mudflow	Silent	Most areas of Sheki raion. Mainly Bash Kaldak and Oraban	To farm, infrastructure and residential houses	Everyone individually	Prevent flooding by any means possible.	Infrastructure rehabilitation after the disaster. Damage assessment	Techniques, Compensations. (Partially)	
24.06.2010 Mudflow	Silent	Most areas of Sheki raion. Mainly Bash Kaldak and Oraban	To farm, infrastructure and residential houses	Everyone individually	Nothing could be done	Infrastructure rehabilitation after the disaster. Damage assessment	Techniques	
January 2016 Wind	Windy	Most areas of Sheki raion.	To farm, infrastructure and residential houses	Nothing	Nothing	Infrastructure rehabilitation after the disaster. Damage assessment	Little financial support. Infrastructure rehabilitation.	

Tovuz raion, Govlar city

Name and address of community..... Tovuz raion, Govlar city

Contact person..... ***

Contact phone, e-mail..... ***

Topics

- Historical disaster events (please also complete the table and map below)

- When was the last disaster event that affected your community?

There was observed strong hail during: 23. 05. 2016, 10. 06. 2017 and mudflow in 13. 06. 2016

- What did it happen?

There was strong hail in Duz Jirdahan, Jalilli and other villages of Tovuz raion and mudflow in Tovuzchay river

- How was the community affected?

Planted fields, fruit trees, as well as the roofs of houses were severely damaged in result of hail and flooding.

- Current practices

- What are the current community practices during disaster events?

Everyone got out of the situation at the expense of individual capabilities and also by support of raion executive of power

- Is disaster risk information disseminated through the community?

Not always

- Are community members aware of the disaster risk?

Only when it is announced by TV or through information canals of raion authorities.

- Does your community receive any information regarding an impending disaster event?

Not always

- If yes, how was the information received?

By TV or through information canals of raion authorities.

- Is the information received by all the different community groups? Do women, children, the elderly and disabled have the same access to this information?

Yes, sometimes information comes from other communities as well and everybody has same level access.

- **Monitoring**

- Do you think it is a good idea to locate monitoring equipment at your community?

Yes

- Do you think this will be maintained?

We hope

- **Communication Devices**

- What communication means are currently used by the community?

TV and by phone (from information canals of raion authorities)

- Considering the existing communication means, what do you consider would be the most effective communication mean(s)?

TV and phone

- Who do you think should be the contact(s) person for your community?

Local municipality representative

- **Response**

- How was the response of your community during the last disaster event?

Everybody tried to protect themselves and their properties

- Are there Community Response Plans implemented?

No

- Are there Evacuation Centres?

No

- What would you think could be the best location for the evacuation centre in your community?

Municipality office

- Are there evacuation routes?

No

- Are the special needs of the women, elderly people, people with disabilities and children considered and addressed?

Partly

What organisation should be responsible to issue the warning	What means should be used to warn the community members	How to warn and who is warning?	What infrastructure and means need to be mobilised?	Any other idea?
Municipality, Executive Office and Ministry of Emergency Situations.	By all possible methods.	Use phone, contact persons	Property and techniques	There is need for well-trained disaster response team and required techniques. Also, community awareness rising work needs to be carried to be able to protect from disasters.

Date of the Disaster	Previous Meteorological conditions	Affected areas	How did it affect?	What measures were taken? Male/Female	What measures were taken by the community?	How did the local government help?	How did the central government help?	What kind of support would have you liked?
23. 05. 2016	Silent	Boyuk Gishlag, Chatakh and Gandallar	Planted fields, fruit trees, as well as the roofs of houses were severely damaged	To save vulnerable people, including women and children	Awareness and impact reduction measures have been taken by local authorities	Warning and assessment and reimbursement of loss	Financial support to reimburse loss	Well advanced and operational early warning system and health and property insurance system.
13. 06. 2016	Silent	Ashagi Gushchu, Dondar Gushchu,	Planted fields, fruit trees,	To save vulnerable people, including	Awareness and impact reduction	Warning and assessment and	Financial support to	Well advanced and operational

		Asrik and Azafla	as well as the roofs of houses were severely damaged	women and children	measures have been taken by local authorities	reimbursement of loss	reimbursement loss	early warning system and health and property insurance system.
10. 06. 2017	Silent	Duz Jirdahan, Jalilli and other villages and areas of Tovuzchay riverbanks	Planted fields, fruit trees, as well as the roofs of houses were severely damaged	To save vulnerable people, including women and children	Awareness and impact reduction measures have been taken by local authorities	Warning and assessment and reimbursement of losses	Financial support to reimbursement losses	Well advanced and operational early warning system and health and property insurance system.

“Nature friends” Zagatala

Name and address of community.....**“Nature friends” Zagatala**

Contact person..... ***

Contact phone, e-mail..... ***

Topics

- **Historical disaster events (please also complete the table and map below)**

- When was the last disaster event that affected your community?

10-20 May 2020

- What did it happen?

Mudflow, water pressure

- How was the community affected?

Damage agriculture, power and water lines

- **Current practices**

- What are the current community practices during disaster events?

Does not exist

- Is disaster risk information disseminated through the community?

No

- Are community members aware of the disaster risk?

No, but only after heavy rains

- Does your community receive any information regarding an impending disaster event?

No

- If yes, how was the information received?

Azərbaycan variantında cavab yoxdur

- Is the information received by all the different community groups? Do women, children, the elderly and disabled have the same access to this information?

No

- **Monitoring**

- Do you think it is a good idea to locate monitoring equipment at your community?

Yes

- Do you think this will be maintained?

Yes

- **Communication Devices**

- What communication means are currently used by the community?

Telephone

- Considering the existing communication means, what do you consider would be the most effective communication mean(s)?

Telephone

- Who do you think should be the contact(s) person for your community?

Movlud Aliyev

- **Response**

- How was the response of your community during the last disaster event?

We have no equipment

- Are there Community Response Plans implemented?
- Are there Evacuation Centres?

No

- What would you think could be the best location for the evacuation centre in your community?

Away from the village

- Are there evacuation routes?

No

- Are the special needs of the women, elderly people, people with disabilities and children considered and addressed?

Within the capabilities of the villagers

- **Fill in the table please**

What organisation should be responsible to issue the warning	What means should be used to warn the community members	How to warn and who is warning?	What infrastructure and means need to be mobilised?	Any other idea?
Local media (Yerli informasiya vasitiləri)	Telephone, television	Responsible executive representatives	Ministry of Emergency Situations (Local equipment, and it does not exist)	

Date of the Disaster	Previous Meteorological conditions	Affected areas	How did it affect?	What measures were taken? Male/ Female	What measures were taken by the community?	How did the local government help?	How did the central government help?	What kind of support would have you liked?
10-20 May 2020	The weather was cloudy and windy	Agriculture lands, roads, backyard areas	It was severely damaged	Everyone was mobilized as much as they could	No action was taken	Water and electricity lines were restored	They gave their instructions to local government	Financial assistance

							ent officials	
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Appendix 4 – NGO Webinar Meeting

Community Based Early Warning

Zoom Meeting

Baku 23. 01.2020

Specialists of the National Hydrometeorology Service of the Ministry of Ecology ***, ***, *** and chairman of the Public Council of the Ministry of Ecology in Azerbaijan, representatives of non-governmental organizations and director of the Regional Center for the Caucasus, ***, NGO leader *** and representatives of communities located in different regions of Azerbaijan on January 23, 2021 conducted a webinar discussion to discuss main aspects of development of community based early warning system as part of “*Strengthening climate services and impact-based multi-hazard early warning to increases resilience to climate change threats and enhance livelihoods of the population in Azerbaijan*” project to be supported by GCF.

Contacts of representatives from the different regions are listed in the table below:

No	Name, Surname	Community	Telephone	E-mail
1	***	Gonagkend Tebiet Dostlari		
2	***	Sheki Tebiet Dostlari		
3	***	Xinalig Tebiet Dostlari		
4	***	Lankaran-Astara Environmental Organization		
5	***	Zagatala Tebiet Dostlari		

The main issues discussed during the meeting were cooperation between non-governmental organizations and the Hydrometeorological Service in order to increase the activity of communities related to the "Early Warning" system to be established in Azerbaijan and to ensure the functioning of the early warning system for communities within the system.

Discussion also included the timely education of communities, their early warning, their types, threats, the tasks they face in the event of such events, their role and ways of working closely with the population, as well as other issues related to the threat steps were discussed.

*** informed about project Outcome 3: Enhanced dissemination and communication of climate risk information and multi-hazard early warning.

He noted that one main element of this outcome is to develop and implement coordinated and integrated protocols and associated capacity to communicate timely risk information and early warning alerts, which will include:

- the development of emergency information and communication protocols and infrastructure;
- use of SMS, social media and other channels;
- interactive feedback loops between NHD, institutional users and end-users; and
- establishing partnerships with the private sector to expand information dissemination channels and feedback mechanism.

He said that local governments and civil society organizations will play a key role in the dissemination of climate and air quality data and information to communities. To ensure that the warning messages reach communities in a timely manner, in each community, appointed people will be responsible for receiving communication from the national CIEWS center. In communities where the lead time is critical, the deployment of a remote siren system will be explored too.

As detailed in the communication and dissemination strategy, different levels of communication will be designed within the communication protocols. To ensure that the warning messages reach communities in a timely manner, in each community, appointed people will be responsible for receiving communication from the national CIEWS center. In addition to that, the CAP implemented within both the CIEWS platform and ICT upgrades will ensure that the warning is available on this platform for all the users. In communities where the lead time is critical, the deployment of a remote siren system will be explored too.

He noted that there will be also established a decision support system displaying real-time information to enable the exchange of multi-hazard emergency alerts and extreme air pollution event warnings over multiple networks. The integration of weather forecast development and dissemination systems will support the seamless integration of forecasting and warning processes.

There will be developed and produced actionable climate information products and sector-specific advisories in agriculture, water resources management, tourism, disaster risk reduction, private sector (e.g. insurance), and ecosystem services amongst others. The warning messages to be delivered will be tailored to the receiver, outlining the information pertinent to each specific sector and user, describing in detail the impact-based forecasting, recommended actions and geographical impact information.

He noted that dissemination and use of impact-based climate risk information and maps, combined with socio-economic and health impact data, will inform climate-resilient planning and decision making and facilitate preparedness and response capabilities of key sectors to slow the rapid onset of hazards.

As part of knowledge management, awareness raising and education on climate risks it was noted that this activity will establish a National Climate Outlook Forum (NCOF) as a platform to provide related climate information at relevant timescales through a regular and sustained multi-stakeholder dialogue process between NHD and users at the national level, feeding into regional processes as relevant.

The establishment of NCOFs will provide an essential mechanism for promoting inter-agency coordination, mainly between the NHD (and MoES) and stakeholders.

Regular meetings will be conducted with relevant institutions and sectors, taking into account that NHD (and MoES) will be delivering services for the agriculture/food security, water, energy, health and disaster risk reduction sectors.

It was noted that the objectives of the NCOF in Azerbaijan are to:

- Identify the specific climatic factors affecting user outcomes;
- Devise tailored products to address identified decision-making needs;
- Ensure that climate and weather information products, including their uncertainties and limitations, are regularly communicated, interpreted and understood by users;
- Discuss user views and obtain feedback for improvement of products and their access;
- Provide an institutional platform for understanding risks and opportunities of past, current and future climate; and
- Provide an inter-agency coordination of policies, sectoral plans and programs linked to potential impacts of hydro-meteorological hazards.

Mr. *** then noted that the other aim of the project is to establish partnerships between the NCOF and other institutions to support regional and international knowledge and information sharing.

Regarding nation-wide awareness raising program on climate risks in Azerbaijan, there will be organized workshops, seminars and campaigns to prepare the public to adapt to climate change.

A comprehensive nation-wide awareness campaign will be implemented within the framework of this project. One of the objectives of the awareness campaigns will be to raise awareness about the new implemented system, included warning criteria and warning levels, climate services available and climate information platforms.

In addition to the information regarding the implementation of the CIEWS and regarding the warning levels that can be expected, within this activity awareness will also be raised regarding response recommendations to the general population, providing information and education on how to secure lives, assets and livelihoods before and during climate-related hazard events.

The awareness programme on climate change, its impacts and ways to prepare the general population to adapt to climate change will be developed.

Then Mr. *** noted that the project will include training of users at national, sectoral and community level on the use of climate and air quality information for climate-resilient planning, decision making and climate risk management. This will include training on the translation of forecasts into potential impacts, engagement with end-users to validate understanding, and establishment of protocols to support end-users for sustained climate application uptake.

In addition to the training and awareness campaigns training will be undertaken at national, sectoral and community level regarding the new products to be implemented within the framework of this project. More specifically, the project will undertake training on the issues of climate information, air quality information, decision-making, information from the impact-based forecasting and disaster and climate risk management. The NHD and MoES will be fully involved in the development of the training material for these courses, and there will be a significant engagement with the end-users of this information in order to ensure that the information that is being transmitted through these training sessions is understood.

Afterwards, *** informed about the activities of the communities and noted that there are already experienced community activists in Azerbaijan and they have done a lot to increase the activity of communities on the environment within the framework of various projects. In particular, it was noted that the participating communities and NGO members also cooperated in several areas related to hazardous hydrometeorological activities and have considerable knowledge in this area.

It was noted during the meeting that after some training with these community assets, they can work directly with their communities as eco-activists to inform them about early warnings, provide maximum protection, and minimize damage to communities.

Later, other aspects were discussed. For example, how to communicate community and community asset information to the public. Many community activists who spoke preferred to send messages over the phone or deliver information using WhatsApp.

Speaking about the prospects of creating work between the project and communities, *** praised the importance of the early warning system for communities within the project. He noted that it is important to establish a coordinating council for the effective organization and discussion of timely information, both at the national level and in the regions. It was noted that the use of the Internet, mobile phones, WhatsApp and scanners, as well as meetings and training in the regions are of particular importance.

Gender issues were also discussed. During the discussion of the issue by men and women, community members said that men's activities were directly related to dangerous events. They take action when they are directly confronted with these events. Women, on the other hand, are less likely to experience dangerous events at home. Although these events are most frightening to men, they can also affect women's activities when a dangerous event occurs (for example, any household activity, water supply, heavy rain, wind, other events). They prefer to make sure that these events do not happen and that they are informed in advance when they happen.

As mentioned, both men and women are interested in this issue. They will be pleased to establish and co-operate with the National Hydrometeorological Service, the Green Climate Fund, and the Early Warning Community system within the project.

It should be noted that Non-Governmental Head *** assured in his speeches that members of the Public Council, representatives of the Caucasus REM and other NGOs will be actively involved in this area. They said that it was very high for the Hydrometeorological Service and the communities to have such a case. At the same time, they expressed their satisfaction with the organization, conduct of work, and active participation as a non-governmental organization.

During the meeting, *** proposed to establish a group to exchange information and provide coordination between the Hydromet Project Team, National Level NGOs and community representatives by use of e-mail. Addresses of representatives of communities, NGOs and the Hydrometeorological Service were shared between participants. It was noted that this will ensure the exchange of views regularly, to discuss issues within the project in the future, to organize an online zoom meeting with project management and to learn more about what the project has done.

The participants noted the importance of holding discussions via webinar with the representatives of the group preparing the project document on cooperation regarding development of community engagement strategy on the Early Warning System in February, and on identifying the main elements and directions of joint activities in this area.

Original Azerbaijani version of the meeting minutes included on the following pages.

İcma Əsaslı Erkən Xəbərdarlıq (Community Based Early Warning) üzrə

Zoom görüşü

Baku 23. 01.2020

Ekologiya Təbii Sərvətlər Nazirliyinin Milli Hidrometeorologiya Xidmətinin mütəxəssisləri ***, ***, *** və Azərbaycanda fəaliyyət göstərən Ekologiya Nazirliyinin İctimai Şurasının sədri , Qeyri-hökumət təşkilatlarının nümayəndələri və eyni zamanda Qafqaz üzrə Regional Mərkəzin direktoru ***, QHT rəhbəri *** və eyni zamanda Azərbaycanın müxtəlif bölgələrində yerləşən icmaların nümayəndələri olan aşağıdakı şəxslər iştirak etmişlər:

№	Name, Surname	Community	Telephone	E-mail
1	***	Gonagkend Tebiet Dostlari		
2	***	Sheki Tebiet Dostlari		
3	***	Xinalig Tebiet Dostlari		
4	***	Lankaran-Astara Environmental Organization		
5	***	Zagatala Tebiet Dostlari		

Görüş zamanı əsas müzakirə olan məsələlər Azərbaycanda yaradılacaq “Erkən xəbərdarlıq” sistemi ilə bağlı icmaların fəallığını artırmaq və sistem çərçivəsində icmalar üçün yaradılacaq erkən xəbərdarlıq sisteminin fəaliyyətini təmin etmək məqsədi ilə qeyri-hökumət təşkilatları ilə Hidrometeorologiya Xidməti arasında əməkdaşlıq müzakirə edilmişdir.

Müzakirənin əsas mövzusu icmaların vaxtlı-vaxtında maarifləndirilməsi, onların erkən xəbərdarlıq, onun növləri, yaratdığı təhlükələr barədə məlumatlandırılması, həmin hadisələr baş verdikdə və yaxud gözlənildikdə onların qarşısında duran vəzifələr, rolu və onların əhali ilə sıx təmasda işləmə formaları, eyni zamanda təhlükə ilə bağlı atılacaq digər addımlar müzakirə edilmişdir.

Yaşıl İqlim Fondu tərəfindən maliyələşdirilməsi nəzərdə tutulan Azərbaycanda təhlükəli hidrometeoroloji hadisələrə dair erkən xəbərdarlıq sistemi layihəsi barədə *** məlumat verərək qeyd etdi ki, Layihənin 3-cü Komponent “ İqlim riski barədə məlumatlarının geniş yayılması və əlaqələndirilməsi və erkən xəbərdarlıq barədədir.

Bu fəaliyyət çərçivəsində vaxtlı-vaxtında risk məlumatlarını və erkən xəbərdarlıq siqnallarını ötürmək üçün əlaqələndirilmiş və integrasiya olunmuş protokolları və əlaqəli potensialın hazırlanmasına dairdir .

Qeyd etdi ki, Bu fəaliyyət təcili məlumat və kommunikasiya protokollarının və infrastrukturun inkişafını əhatə edəcəkdir; SMS, sosial media və digər kanallardan istifadə; NHD, institusional istifadəçilər və son istifadəçilər arasında interaktiv məlumat dövrləri; və məlumat yayılması kanallarını və mexanizmini genişləndirmək üçün özəl sektorla əməkdaşlıq qurmağa yönəlib . Yerli hökumətlər və vətəndaş cəmiyyəti təşkilatları iqlim və hava keyfiyyəti məlumatlarının icmalara yayılmasında əsas rol oynayacaqdır.

Ünsiyyət və yayılma strategiyasında izah edildiyi kimi, ünsiyyət protokolları daxilində müxtəlif səviyyəli ünsiyyətlər dizayn ediləcəkdir. Xəbərdarlıq mesajlarının icmalara vaxtında çatmasını təmin etmək üçün hər icmada təyin olunmuş şəxslər milli CIEWS mərkəzindən əlaqə almaqdan məsul olacaqlar. Bundan əlavə, həm CIEWS platformasında, həm də İKT yeniləmələrində tətbiq olunan CAP, bu platformada bütün istifadəçilər üçün xəbərdarlığın mövcud olmasını təmin edəcəkdir. Başlanğıc vaxtının kritik olduğu icmalarda, uzaq bir siren sisteminin yerləşdirilməsi də araşdırılacaqdır.

Daha sonra məlumat verildi ki, layihə fəaliyyətinin biri də məruzə və həssaslıq məlumatları ilə real vaxt məlumatlarını əks etdirən bir qərar dəstək sistemi (DSS) qurmaq barədədir.

Sistem çox təhlükəli fəvqəladə xəbərdarlıqların və həddindən artıq havanın çirklənməsi hadisəsi xəbərdarlıqlarının birdən çox şəbəkə üzərində mübadiləsini təmin etmək üçün ümumi xəbərdarlıq protokolu (CAP) formatında məlumatların kodlaşdırılması imkanlarını əhatə edəcəkdir. Hava proqnozunun inkişafı və yayılması sistemlərinin integrasiyası, proqnozlaşdırma və xəbərdarlıq proseslərinin fasiləsiz integrasiyasına dəstək olacaqdır.

İKT-nin təkmilləşdirilməsindəki Rabitə və Yayım Sistemi (CDS) bütün təhlükə və təsir əsaslı proqnozlaşdırma barədə məlumat verəcək və bu məlumatlar CIEWS istifadəçi platforması vasitəsilə də əldə edilə biləcək. CDS, NWP proqnozlaşdırma və digər təhlükə proqnozlaşdırma məlumatlarını birləşdirəcək və hökumət istifadəçiləri üçün bir DSS təmin edəcəkdir. Hər iki sistemdə bu məlumatların mövcud olmasını təmin etmək üçün bir CAP tətbiq ediləcəkdir.

Daha sonra ***qeyd etdi ki, burada kənd təsərrüfatı, su mənbələrinin idarəedilməsi, turizm, fəlakət riskinin azaldılması, özəl sektor (məsələn, sığorta) və ekosistem xidmətləri sahələrində fəaliyyət göstərə bilən iqlim məlumat məhsulları və sektora aid tövsiyələri birlikdə inkişaf etdirmək nəzərdə tutulur.

Sosial-iqtisadi və sağlamlığa təsir məlumatları ilə birlikdə təsirlərə əsaslanan iqlim riski məlumatlarının və xəritələrin yayılması və istifadəsi, iqlimə davamlı planlaşdırma və qərar qəbul etməyi məlumatlandıracaq və əsas sektorların yavaş və sürətli başlanğıc təhlükələrinə hazırlıq və cavab qabiliyyətlərini asanlaşdıracaqdır.

Aşağıda göstəriləndi kimi, çatdırılacaq xəbərdarlıq mesajları alıcıya uyğunlaşdırılacaq, hər bir konkret sektora və istifadəçiyə aid məlumatları əks etdirəcək, təsirlərə əsaslanan proqnozlaşdırma, tövsiyə olunan hərəkətlər və coğrafi təsir məlumatlarını ətraflı təsvir edəcəkdir.

Bilik idarəetməsi, məlumatlılığın artırılması və iqlim risklərinə dair təhsil barədə məlumat verən ***bildirdi ki, bu sahədə əsas addımlardan biri Milli İqlim Görünüşü Forumunun (NCOF) yaradılmasıdır

Bu fəaliyyət, NHD ilə istifadəçilər arasında milli səviyyədə müntəzəm və davamlı bir çox tərəfli dialoq prosesi vasitəsi ilə müvafiq vaxt miqyaslarında iqlim məlumatlarını təmin etmək üçün bir platforma olaraq Milli İqlim Görünüşü Forumu quracaq və lazımi bölgə proseslərinə girəcəkdir.

Milli İqlim Görünüşü Forumunun (NCOF) yaradılması son illərdə ÜMT tərəfindən dəstəklənmişdir. QHT-lər, qurumlararası koordinasiyanın təşviqi və milli səviyyədə informasiya təminatçıları ilə istifadəçilər arasında müntəzəm çoxtərəfli dialoqun təşviqi üçün vacib bir mexanizm təmin edirlər. Azərbaycanda NCOF-un yaradılması NHD (və FHN) üçün digər maraqlı tərəflərlə qarşılıqlı əlaqə qurma imkanı təqdim edəcəkdir. Yuxarıda qeyd edildiyi kimi, CIEWS sahəsində maraqlı tərəflər arasında iş birliyinin olmaması, əsas CIEWS-də qeyd edilməli olan əsas boşluqlardan biridir.

Qurulan NCOF, növbəti NCOF iclasında nəzərdən keçiriləcək və təsdiqlənəcək icra prosedurlarını müəyyənləşdirərək sektorlarda mövsümi və qısamüddətli proqnozların istifadəsində texniki inkişafı təmin edəcəkdir.

NHD (və FHN) tərəfindən kənd təsərrüfatı / qida təhlükəsizliyi, su, enerji, səhiyyə və fəlakət risklərinin azaldılması sektorları üçün xidmətlər göstəriləcəyini nəzərə alaraq, müvafiq qurum və sektorlarla mütəmadi görüşlərin planlaşdırılmasını təmin edən mexanizmlər tətbiq ediləcəkdir. CIEWS-in tətbiqi bu xidmətlərin yüksək keyfiyyətli fəaliyyət göstərə bilən məlumatlarla təmin olunmasını təmin edəcəkdir. Qeyd etmək lazımdır ki, Azərbaycanda NCOF vasitəsi ilə gələcək alətlərin inkişafı üçün dəstək və dəstək də baş verəcəkdir.

Daha sonra məlumat verildi ki, layihə fəaliyyətinin bu sahədə digər məqsədi regional və beynəlxalq bilik və məlumat mübadiləsini dəstəkləmək üçün NCOF ilə digər qurumlar arasında ortaqlıqların qurulmasıdır.

Daha sonra qısaca olaraq aşağıdakı komponentlərə dair məlumat verildi:

- İqlim riskləri və xidmətləri barədə məlumat, təhsil və rabitə (IEC) materialları hazırlamaq və bütün vasitələrlə yaymaq. (sosial media, yazılı media, televiziya, radio və s.)

- ictimaiyyəti iqlim dəyişikliyinə uyğunlaşmağa hazırlamaq üçün seminarlar, seminarlar və kampaniyalar vasitəsilə Azərbaycanda iqlim riskləri ilə bağlı geniş bir ümumdünya məlumatlandırma proqramı hazırlayın və həyata keçirin; iqlimlə əlaqəli təhlükəli hadisələrdən əvvəl və bu müddətdə həyatlarını, varlıqlarını və dolanışıqlarını təmin etmək; və alternativ iqlimə davamlı yaşayış strategiyalarını qəbul etmək.

- İqlimə davamlı planlaşdırma, qərar qəbul etmə və iqlim riskinin idarə olunması üçün istifadəçilərə iqlim və hava keyfiyyəti məlumatlarının istifadəsi üzrə milli, sektor və icma səviyyəsində təlimlərin keçirilməsi. Buraya proqnozların potensial təsirlərə çevrilməsi, anlaşmanı təsdiqləmək üçün son istifadəçilərlə əlaqə və davamlı iqlim tətbiqetmə üçün son istifadəçiləri dəstəkləyən protokolların yaradılması üzrə təlimlər daxildir.

Daha sonra *** icmaların fəaliyyəti barədə məlumat verərək qeyd etdi ki, Azərbaycanda artıq kifayət qədər təcrübəyə malik icma fəalları mövcuddur və onlar müxtəlif layihələr çərçivəsində icmaların ətraf mühit barədə fəallığının artırılmasında kifayət qədər fəaliyyət göstərmişlər. Xüsusilə qeyd olundu ki, tədbirdə iştirak edən icmaların və QHT üzvləri eyni zamanda təhlükəli Hidrometeoroloji fəaliyyətlərlə bağlı bir neçə sahədə əməkdaşlıq etmiş və kifayət qədər bu sahədə biliklərə malikdirlər.

Görüş zamanı bildirildi ki, bu icma aktivləri ilə müəyyən treninqlər keçiriləndən sonra onlar birbaşa ekoaktivist kimi özlərinin icmaları ilə sıx işləyərək onların erkən xəbərdarlıq barədə məlumatlandırılması, maksimum müdafiə olunması,

İcmalar üzrə dəyən zərərin minimuma endirilməsi sahədə kifayət qədər iş apara bilirlər

Daha sonra isə burada digər aspektlər də müzakirə edilmişdir. Məsələn İcmalar və icma aktivləri məlumatları hansı yolla əhaliyə çatdırılsın. Bir çox çıxış edən icma fəalları telefonla mesajların göndərilməsi və ya whatsappdan istifadə etməklə məlumatların çatdırılmasına üstünlük verdilər.

Layihə ilə icmalar arasında işin yaradılması perspektivləri barədə çıxış edən ***; layihə çərçivəsində icmalar üçün erkən xəbərdarlıq sisteminin vacibliyinə xüsusi diqqət verilməsini yüksək qiymətləndirdi. O qeyd etdi ki, istər milli səviyyədə, istərsə də regionlarda vaxtlı vaxtında məlumatlandırmanın səmərəli təşkili və müzakirə aparmaq üçün əlaqələndirmə şurasının yaradılması vacibdir. Bu zaman internet, mobil telefonlar, ÜatsApp və skanallardan istifadə etməyin və regionlarda görüş və treninqlərin keçirilməsinin xüsusi əhəmiyyətini olması qeyd edildi.

Digər məsələ olan “Gender məsələləri” də müzakirə edilmişdir. Kişi və qadınların məsələdə müzakirəsi vaxtı icma nümayəndələri bildirdilər ki, kişilərin fəaliyyəti bilavasitə təhlükəli hadisələrlə bağlı olur. Onlar bu hadisələrlə birbaşa üzləşən zaman müəyyən fəaliyyət həyata keçirir. Qadınlar isə adətən evdə olduqları, təhlükəli hadisələrlə az üzləşirlər. Bu hadisələrin ən çox kişiləri qorxutması, onlar üçün ciddi olmasına baxmayaraq qadınlar da təhlükəli hadisə baş verdiyi zaman (məsələn hər hansı ev təsərrüfat fəaliyyətinin həyata keçirilməsi, su təchizatı, güclü yağış, külək olduqda, digər hadisələr baş verdikdə) onların fəaliyyətinə təsir edə bilər. Bu hadisələrin baş verməməsi və baş verdiyi zaman əvvəlcədən məlumatların olması, müvafiq hazırlıq işlərinin görülməsinə üstünlük verirlər.

Qeyd olunduğu kimi istər kişi istərsə də qadınlar bu məsələdə maraqlıdırlar. Onlar layihə çərçivəsində Milli Hidrometeorologiya Xidməti, Yaşıl İqlim Fondunun dəstəyi ilə İcmalar üzrə “Erkən Xəbərdarlıq” siteminin yaradılmasına və bu sahədə əməkdaşlıq etməkdən məmnun olacaqlar.

Xüsusi ilə qeyd edilməlidir ki, iştirak edən Qeyri-Hökumət rəhbəri *** öz çıxışlarında bu sahədə həm İctimai Şura üzvlərinin, həm Qafqaz REM

nümayəndələrin və eyni zamanda digər QHT-lərin fəal iştirak edəcəyinə əminlik verdilər. Onlar bildirdilər ki, Hidrometeorologiya Xidməti ilə icmalar arasında belə bir iş olması çox yüksək haldır. Eyni zamanda işlərin təşkili, aparılması, qeyri - hökumət təşkilatı kimi fəal iştirak edilməsindən çox məmnun olduqlarını bildirdilər.

Görüş zamanı *** İcmalar, QHT-lər və Hidrometeorologiya Xidmətinin nümayəndələrinin email ünvanlarından ibarət qrupun yaradılmasını, müamadə olaraq fikir mübadiləsinin aparılmasının, gələcəkdə layihə çərçivəsində olan məsələlər barəsində müzakirə aparılmasını, layihə barəsində geniş məlumat almaq üçün layihə rəhbərliyi ilə online - zoom görüşün təşkil edilməsini təklif etmişdir. Layihə rəhbərinə müraciət edilib, layihəyə rəhbərlik edə beynəlxalq ekspertlərin də bu sahədə fikirləri bildirilsin.

İştirakçılar Erkən Xəbərdarlıq Sisteminin yaradılmasına dair layihə sənədini hazırlayan qrupun nümayəndələri ilə üeb nar vasitəsilə Fevral ayında müzakirələrin aparılmasını və bu sahədə birgə fəaliyyətin əsas elementlərini və istiqamətini müəyyənləşdirməyin vacibliyini qeyd etdilər.

Appendix 5 – UNEP Mission Report, October 2022

Location: Baku, Azerbaijan

Dates: 25 – 28 October 2022

Participants: Mr. ***, GCF CIEWS Portfolio Manager, UNEP
Ms. ***, Project Development Consultant, UNEP

MISSION OBJECTIVES

- To brief the Ministry of Ecology and Natural Resources (NDA) and the National Hydrometeorological Service (NHMS) on the status of project development
- To conduct bilateral meetings with NHMS and other stakeholders/partners to further refine the funding proposal
- To participate in the launch of the EU-funded twinning project “Strengthening hydrometeorological and climate services in Azerbaijan”

KEY OBSERVATIONS AND CONCLUSIONS

- **High-level meeting with H.E. ***, Minister of Ecology and Natural Resources of the Republic of Azerbaijan:** Mr. *** briefed the Minister on the status of the GCF proposal prepared by UNEP. The Minister emphasized that strengthening early warning systems is a high priority for the Government of Azerbaijan. The Minister affirmed his full commitment to the proposed GCF project.
- **Bilateral discussions with the NHMS under the MENR of the Republic of Azerbaijan:** Mr. *** and Ms. *** briefed the Head of Azerbaijan NHMS on the status of the GCF proposal and key issues to be addressed. UNEP and NHMS representatives discussed solutions and actions to address the key issues, including information requirements from NHMS and agreement on the involvement of international technical partners.
- **Bilateral discussion with the International Federation of Red Cross and Red Crescent Societies (IFRC) Country Delegation in Azerbaijan:** Mr. *** and Ms. *** discussed with the Programme and Operations Manager *ad interim* and the Cash & Voucher Assistance Delegate on potential for involvement of IFRC and Azerbaijan Red Crescent in the proposed GCF project. NHMS confirmed agreement on involvement of IFRC as a Technical Partner.
- **Discussions with the Finnish Meteorological Institute (FMI),** which is leading the EU-funded twinning project on hydromet strengthening in Azerbaijan: Mr. *** and Ms. *** discussed with the Director of Expert Services, FMI, and the Head/Deputy Head of Azerbaijan NHMS on technical support needs for the GCF proposal prepared by UNEP, and complementarity with the EU-funded twinning project. NHMS confirmed agreement on the involvement of FMI as a Technical

Partner and how the EU-funded twinning project outputs could inform further refinement of the GCF proposal.

- **Launch Event for the EU-funded twinning project “Strengthening hydrometeorological and climate services in Azerbaijan”:** Mr. *** delivered a presentation on the proposed GCF project in Azerbaijan. The presentation was well received and provided an opportunity to discuss synergies, complementarity and potential for upscaling of the EU-funded twinning project.

MISSION LOGISTICS

Day 1: Tuesday 25 October 2022		
Stakeholder	Venue	Key Participants
IFRC Azerbaijan	IFRC	Mr. ***, Programme and Operations Manager <i>ad interim</i> Mr. ***, Cash & Voucher Assistance Delegate
Day 2: Wednesday 26 October 2022		
Stakeholder	Venue	Key Participants
National Hydrometeorological Service (NHMS)	NHMS	Ms. ***, Head of NHMS Mr. ***, Deputy Head of NHMS Mr. ***, Director of Hydromet Situation Centre
Finnish Meteorological Institute (FMI)	NHMS	Mr. ***, Director of Expert Services Ms. ***, Resident Twinning Advisor
Day 3: Thursday 27 October 2022		
Stakeholder	Venue	Key Participants
Ministry of Ecology and Natural Resources (NDA)	MENR	H.E. ***, Minister of Ecology and Natural Resources Mr. ***, Regional Coordinator, UNEP Europe Office
Day 4: Friday 28 October 2022		
Stakeholder/Event	Venue	Key Participants
Launch Event for EU-funded twinning project on hydromet strengthening	Landmark Hotel	Ms. ***, Head of NHMS Mr. ***, Deputy Head of NHMS Mr. ***, Director of Expert Services, FMI Ms. ***, Resident Twinning Advisor, FMI Mr. ***, Junior Project Leader and Head of Measurement Quality and Technical Division, Lithuanian Hydrometeorological Service Mr. ***, Head of Division for Observation Systems and Methodological Support, NHMS <i>Participants to the High-Level segment included H.E. ***, H.E. Mr. *** (Ambassador of the European Union to the Republic of Azerbaijan), H.E. Ms. *** (Deputy Minister, Ministry of Foreign Affairs of Finland), and Ambassadors of France and Lithuania</i>
NHMS and FMI	NHMS	Ms. ***, Head of NHMS Mr. ***, Director of Expert Services, FMI Mr. ***, Head of Group, International Projects, FMI

