



**Integrating Climate Change Risks into Water and Flood Management by Vulnerable Mountainous Communities in the Greater Caucasus Region**

**Deliverable 2 (2016): Establishment and training of Flood Forecasting Unit within the MOES**

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PROJECT - Integrating Climate Change Risks into Water and Flood Management by Vulnerable Mountainous Communities in the Greater Caucasus Region

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## 1. Introduction

The main objective of this report is to describe the required institutional arrangement of the flood forecasting unit within the Ministry of Emergency Situations (MOES) and the suggested training in order to ensure the sustainability of the system.

## 2. Background

Within the framework of this project, the implementation of several flood Community-Based Early Warning Systems (CBEWSs) was proposed. As it has been described previously in several deliverables by this consultant, the implementation of a flood CBEWS do require the implementation of a full (National or Central) Flood Forecasting Early Warning System (FFEWS). This is due to the local characteristics of the catchments in the study area, with very short lead times.

The implementation of a national FFEWS does require a new institutional arrangement within the Ministry of Emergency Situations (MOES) and some associated training.

## 3. Institutional Arrangement

In order to ensure the sustainability of the flood forecasting system, it is advised that a flood forecasting unit within the State Water Agency of the MOES is formed. The initial steps required for the formation of this unit has been already undertaken. Also, some initial steps regarding training of this unit has taken place. It is advised, however, that a more formal procedure regarding the formation of this unit and the associated training is undertaken.

The required flood forecasting unit would sit within the State Water Agency and should have the responsibility of maintaining and operating the implemented flood forecasting system. Regarding institutional arrangement within the State Water Agency in the MOES, it is suggested that the flood forecasting unit is linked to the flow forecasting activities for reservoir operations within the same agency. The following roles and responsibilities are envisaged for this unit:

- Proper maintenance of the flood forecasting system, including but not limited to:
  - o Addition of new data sources (stations, meteorological data, and satellite data).
  - o Addition of new modelling sources, both hydrological and hydraulic
  - o Addition of new areas to be considered within the system

- Update of existing models
- Operation of the flood forecasting system. Daily operation of the system, ensuring that the proper data are being used and the forecasting platform results are reasonable. This operation should be carried out every day, even if no flooding is predicted.
- Provision of flood warning to the relevant organisations.
- Follow-up of emergency situation, providing more frequent data during these situations.
- Provision of information regarding the end of an emergency situation.
- Periodic validation and quality assessment of the system.

It should be noted that the fact that the flood forecasting unit sits within the MOES helps in the dissemination of warnings, because the MOES is the responsible organisation within Azerbaijan to communicate any warning to any other relevant authority.

It is recommended that the flood forecasting unit is formed at least by three people, and that this unit is manned 24-7 (24 hours a day and seven days per week). This is because some events have occurred during night time and the lead time in the study area is less than 2 hours.

#### 4. Required Training

In order to ensure the sustainability of this system it is recommended that the flood forecasting unit members receive extensive training in the following topics:

- Training in Hydrometric Databases
- Training in flood modelling
- Training in meteorological forecasting products
- Training in satellite precipitation estimates data
- Training in the development of flood forecasting procedures
- Training in warning procedures