

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

Deliverable 4 (2016): Community-based implementation

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

Deliverable 4 (2016): Community-based implementation			Date
Prepared by	Juan Fernandez	Signature	30/07/2016
Checked by		Signature	
Approved by		Signature	

1. Introduction	4
2. Background.....	4
3. Implementation.....	7
4. Community Flood Emergency Planning	7
5. Training.....	12
6. Communication/Dialogue with the Communities	12
7. Implementation Document.....	12
Appendix A	13
Appendix B	31

1. Introduction

This report will describe the implementation process of the Community Based Early Warning System in the community of Mikhligova. The idea is that this implementation process is replicated in the different communities participating on the scheme.

2. Background

The Project document states the need to set up a CBFEWS in order to reduce the flooding risk in the project study area. The design and approach for the community-based flood forecasting early warning system has been described in numerous and previous deliverables by this consultant. A brief description of CBFEWS can be found below, enumerating the main advantages of such a system.

2.1 Community based Flood Early Warning System

A community based flood early warning system (CBFFEWS) is a locally based operational flood forecasting and warning activities of a community that aids them in mitigating the effects of flooding in their area. This is usually a relatively cheap, easy to sustain system enhanced by the direct and active participation of the community and its leaders. The ultimate goal of the system is to protect life and property by achieving and maintaining a high-level of community preparedness through timely flood information and warnings. This system is more important and efficient in areas prone to floods.

The most important characteristic of a CBFFEWS is community participation and empowerment. It empowers the people of the community to protect, prepare themselves and make them resilient against the disastrous effects of floods. The community is in the best position to undertake preparedness measures against floods.

The presence of a full flood forecasting (operational) framework for an early warning system alone sometimes is not enough to effectively minimise or prevent the damages from flooding. Early warning systems are sometimes neglected by the people, especially if they are not involved or fully aware of all the implications. One of the main challenges in early warning systems is implementing and sustaining it. The idea of incorporating the active involvement of the people in the community with an early warning system aims to increase the effectiveness

of such systems. Learning by actual participation and taking a part in the system enable people to understand more the value of these systems not only for themselves but for the whole community that will be affected, and make them become more responsible in performing their tasks in implementing and sustaining the system.

The following basic elements and features of a CBFEWS are:

- People's participation - community members are the main actors and propellers; they also directly share in the benefits of disaster risk reduction and development.
- priority for the most vulnerable groups, families, and people in the community
- risk reduction measures are community-specific and are identified after an analysis of the community's disaster risk
- existing capacities and coping mechanisms are recognized
- the aim is to reduce vulnerabilities by strengthening capacities; the goal is building disaster resilient communities
- links disaster risk reduction with development
- outsiders have supporting and facilitating role

There are some key factors that should influence the decision to implement a CBFEWS:

- Frequency of flooding
- Community's interest and awareness
- Possible lead time
- Cost-benefit of the implementation versus flood damages

If a community is not interested in a CBFEWS, the success of the scheme may be compromised. Maintenance and sustainability aspects have to be considered, and therefore a community has to be fully involved in the implementation of a CBFEWS in order to ensure its success. This interest can be related to the number of flood events this particular community has suffered in recent years. Therefore, a successful CBFEWS is characterised by a:

- watershed approach
- community participation
- community counterpart
- sense of ownership

Early warning systems have four different components, namely:

1. Risk Knowledge: risk assessment exercise provide essential information in order to set priorities for mitigation and prevention strategies and designing early warning systems.
2. Monitoring and forecasting: systems with monitoring and forecasting capabilities provide timely estimates of the potential risk faced by communities.
3. Dissemination: communication systems are needed for delivering warning messages to the potentially affected locations. Messages need to be reliable, synthetic and simple to be understood by authorities and the public.
4. Response: coordination, good governance and appropriate action plans are key points in effective early warning. Likewise, public awareness and education are critical aspects of disaster mitigation.

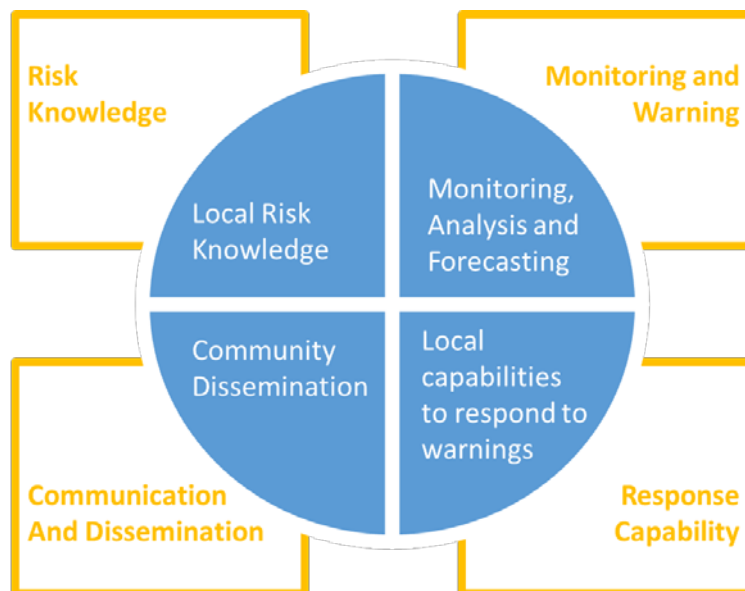


Figure 1 - EWS components

2.2 Local Situation

The local situation of the communities regarding floods and flash-floods was thoroughly described in the ToR for a Flood Forecasting EWS (deliverable 5 – 2013). The main output from the assessment of the local situation was that due to the short lead-time available for any community in the study area, all the flood events to occur in the area could be considered as flash-floods (a lead time less than 6 hours). This fact compromises the community involvement for the monitoring, warning and forecasting component.

2.3 Communities

There is no up-to-date formal flood catalogue, and therefore it is challenging to define the communities that should benefit from this scheme. Local experts have gathered information from local authorities regarding which communities would benefit further from the implementation of a CBEWS.

3. Implementation

The implementation of the CBEWS in the communities will follow the planning depicted in the Deliverable 1 (2016) for this consultancy. As previously noted, this implementation has been defining considering that a Community Emergency Plan will be implemented in each of the communities. This ensures that all the aspects of a CBEWS are considered and that the community members are fully involved in the implementation of the system.

It should be noted that the implementation of this scheme would vary depending on the status of community practices in every community. Some communities in the study area already have community groups or procedures for flood emergencies, whereas some other communities do not have any system in place.

4. Community Flood Emergency Planning

In order to ensure that the Community-based Flood Forecasting Early Warning System is fully embedded into the community practices during disaster events, the implementation of a Community Flood Emergency Plan (CFEP) is recommended.

A Community Flood Emergency Plan outlines the roles and responsibilities of all parties to be involved, actions to be taken, coordination arrangements and communication channels to be used prior to, during and after a flood event. The purpose of planning for flood emergencies is to reduce the risk to health and life and the damage caused by flooding.

Building community resilience is something that many people and communities already do without realising it, however having a flood emergency plan may form an important part of how a particular community might best respond to a flood situation. By building on existing local relationships and networks, using local knowledge and preparing for risks, a community is

in a better position to cope during and after a flood event. A flood resilient community will not only be better prepared to respond at the time of a flood, but will be better able to cope in the long-term. The community flood plan will assist the community in reducing the negative effects of a flood regardless of its source.

Formalising of the flood response in the form of a CFEP will help to inform all who need to be involved as to the overall response effort, and illustrate what tasks are being carried out by other parties. This has the advantage of ensuring that duplication of tasks will not occur and gaps in response are avoided.

The knowledge and experience of flood response procedures gained by local authority and emergency services staff can be lost when they are absent, move to other posts or retire. Having a flood emergency plan ensures that the experience and lessons learned by current responsible people in the community can be preserved and drawn upon by being incorporated and recorded in a written format for use by all relevant people in the future.

It should be noted that no two communities are the same as each one may have different needs. Thus, there is a need gather local flood information, which can then be used to create the community flood plan. The flood emergency plan should be maintained and practiced regularly.

There are some key steps required during the implementation of the CFEP. In the sections below the different steps required for the implementation would be described for the community of Mikhligova.

4.1 Establishment of Community Group

A community group in each community should be established, with relevant householders, business and community leaders. Working together as a community or group to complete a plan will help in responding quickly when flooding happens and what practical actions to take before and during a flood, helping reduce the damage flooding can cause.

In the Mikhligova case, there are already different community groups formed. The main group within that community is the Civil Defence Group, formed by four people, namely the major of Mikhligova, two teachers and an active person of the community. Under the Civil Protection Group there are other groups, such as the medical team group (with two people), the rescue team group (5 people) and the fire team group (5 people). Therefore, it has been decided that the community group for the CFEP will be formed by the Civil Protection Group.

4.2 Raise awareness of the flood risks in the community

Prior to a flood, the flood community group should promote awareness to householders within the community of the actions and responsibilities they have in regard to preparing, responding to and recovering from a flood. Householders should be encouraged to have their own property flood protection equipment and household flood plan.

In the Mikhligova community, thanks to the fact that there two teachers in Civil Defence Group, disaster awareness is somehow included in the school programme. Nonetheless, this has been discussed with community representatives, and this will be included further, detailing the flood emergency plan. Also, community member will participate in training sessions to be undertaken by the Regional Ministry of Emergency Situations (MOES) Centre, describing the CBEWS and how to react during flood events.

4.3 Identify the flood risks in the community

Local knowledge on how every community has been flooded in the past or how is likely to flood in the future should be gathered. All the properties within the community at risk of flooding should be listed, including property other than homes damaged by flooding (e.g. where gardens or cars were damaged by floodwater). These lists will help to form a flood plan and enable the group to target resources to specific areas.

In order to define this list, the Mikhligova community has received a map with the flood risk areas, based on information from a flood modelling exercise. This information is being combined with their local know in order to define a list with all the properties at risk. This information will be disseminated throughout the community.

4.4 Identify vulnerable people that are at risk of flooding

Some members of the community may be at greater risk from a flood than others due to their age, disability, or illness (both short term and long term). Vulnerable people should be identified prior to a flood so that providing assistance to them is included in the flood plan. People in the community should be encouraged to contact the flood plan group if they feel they might need assistance, even if it is only during a short period of time.

This is something that has been already identified within the Mikhligova community, and there is already a list detailing vulnerable people in their community. Nonetheless community members will be reminded about this during training and also about the fact that they may register temporarily as a vulnerable person.

4.5 Identify community resources

The community should be aware of the flood protection products available. Within the framework of this project the communities have been handed flood protection equipment (sirens, generators, projectors, extension cables, power saws, various type of ropes, metal cutting scissors, gloves, water pumps, shooter hoses, suction hoses, lamps, megaphones, shovels, boots, buckets, crowbars, hand saws, axes and raincoats).

Also, evacuation routes and centres should be identified and properly disseminated throughout the community. This identification should be carried out considering both historical flooding and information from the flood hazard maps produced within the framework of this project. Some of the above-mentioned equipment should be located in the designated evacuation centre in order to facilitate its use.

The equipment listed above had not been received by the Mikhligova community the last time the consultant meet with the Mikhligova representatives. However, it is envisaged that they will receive this equipment shortly. Also, it should be noted that during the training by the Regional MOES Centre, information about the use of this equipment will be detailed. Regarding pre-existing equipment, this is very limited, and just some medical equipment is available.

No evacuation centres or evacuation routes exist in the Mikhligova community. During the implementation of this scheme, evacuation routes will be identified in the community and properly signed. This information will also be available in a community flood risk map. Regarding evacuation centre, at this moment there is no information about what building could be used for this purpose.

4.6 Decide on a Communication Plan

The communication plan should cover all different possibilities. The deployment of sirens within the community should be undertaken considering that all the different households are covered and that household members understand the meaning of the sirens and the associated actions. Also, a detailed list with all the different contact number should be compiled. Floods can occur when people are working or are away and may need to be contacted, and also when they are sleeping, and this should be taken into account. Designate people should keep the list updated and keep the list with the flood emergency plan. It should be decided in advance how a flood alert is to be communicated.

The communication plan in the Mikhligova community has initially being planned. The deployment of sirens will be undertaken whenever the sirens are received. For Mikhligova there will be a siren, and the initial location for this siren is the community building, because its location is approximately in the middle of the community area, ensuring maximum access to all the properties. Mobile phone SMS and phone calls will also be used during the communication process. The community members will be aware of the meaning of all the different warning levels and siren sounds.

4.7 Decide on an Action Plan

Once the flood risk, the vulnerable people and the community resources are identified, safe actions to be taken by residents to protect against those risks should be decided and disseminated throughout the community. The proposed actions should be realistic and safe. Also actions regarding the vulnerable people in every community should be agreed. Actions could be: moving valuable possessions, furniture and paperwork upstairs; switching off water, electricity and gas supplies if needed and switching them back on when it is safe to do so; gathering together prescribed medication and repeat prescriptions if it is likely that they may need to be evacuated from their home.

In Mikhligova, the action plan to be followed during emergencies will be agreed with community representatives. At this point, using the information from the risk analysis and as previously noted, evacuation signs will be deployed indicating a safe route during disasters. In the absence of a formal evacuation centre (to be determined), the evacuation route will have safe building as destination. Within this building, flood equipment will be stored.

Also, community members will have information about what to do in the moments before a flood emergency. This information will be disseminated through the above-mentioned training.

4.8 Test the flood plan

A dry-run of the community emergency flood plan should be undertaken with as many as possible community members participating.

There will be a test dry drill of the CBEWS just after the implementation. This will be undertaken in order to identify possible flaws and gaps in the system and in order to raise awareness into the community members.

5. Training

As has been indicated throughout this report, several training sessions will be required in order to ensure the sound implementation of the CBEWS and the CFEP. Some of these training sessions have been already been undertaken, through formal workshops and informal meetings. However, some more training sessions will be needed, and it should be noted that periodic trainings are suggested in order to ensure that the CBEWS is not neglected and properly maintain.

6. Communication/Dialogue with the Communities

It is important that an open and fluent dialogue is maintain between the different communities and the central operational centre within the State Water Agency of the Ministry of Emergency Situation and its Regional Centre. In order to keep this communication it is a advised that a list of the all the community representatives (community group) stating names, occupation, responsibility and contact details (telephone number and email) is created and updated regularly.

7. Implementation Document

In order to help in the implementation of the community flood emergency plan, the consultant has created a template document to be filled up by the different communities participating in the scheme. The consultant will help the community of Mikhligova to fill up this plan directly, but it should be noted that all the different communities should complete this template (with the help of the Regional Centre or National Experts). The template for this can be found in Appendix A. In Appendix B, the initially filled up template for the community of Mikhligova can be found.

Appendix A

COMMUNITY NAME

COMMUNITY FLOOD EMERGENCY PLAN

THIS TEMPLATE COMMUNITY FLOOD EMERGENCY PLAN
CONTAINS RECOMMENDATIONS FOR THE STRUCTURE AND
CONTENT OF A FLOOD EMERGENCY PLAN

EXECUTIVE SUMMARY

Purpose of this Section:

This section will be a brief summary of the main features of the document, and will outline in general terms, the content of the plan

Suggested Content of this Section:

- It should contain an outline of the aims of the plan.
- It shall give a brief description of what the plan is about.
- The persons and organisations involved shall be noted
- The different levels/degrees of flood response shall be introduced.

	Flood Sub Plan	Version No:	Issued on:	Prepared by:
Copy No:		Ref:		

1. INTRODUCTION

Purpose of this Section:

The Introduction of the Flood Emergency Plan will ensure a better understanding of what the plan is about and how its aims are to be achieved through the document.

Suggested Content of this Section:

Purpose
Intended usage
Background
Structure of the plan.

2. AREA OF OPERATION AND FLOOD HISTORY – risk assessment

Area of Operation

Purpose of this Section:

This section describes the geographical areas that are covered by the CFEP. It is intended to give the reader an understanding of the expected areas that will be affected by any possible flooding.

Suggested Content of this Section:

Name of area and Community and Rayon in which it lies;
Map of Area Covered by the CFEP;
Subject Area (in km²);
Population and estimate of the population affected by flooding;
Rivers passing through the area and those which cause flooding;
Names of access roads;
Locations of important buildings;
Refer to maps in appendices
Other details deemed relevant by the writer.

Flood History – Risk assessment

Purpose of this Section:

This section describes the history of flood events in the area. It is intended to give the reader an understanding of the expected extents and severity of any possible flooding based on an explanation of past events.

Suggested Content of this Section:

Explain how regularly flooding occurs in the area;
Describe the worst event in recent times;
How quickly do the flood waters rise and recede;
What are the most commonly affected areas and frequency of flooding in those areas;
What roads are closed off during flooding;
Other details deemed relevant by the writer;
What depths have been recorded at referenced locations;
Refer to historical and predictive flood maps in Appendix B (Maps);

ROLES AND RESPONSIBILITIES

Purpose of this Section:

This section will be used as a quick reference guide for each organisation outlining their roles and responsibilities. These roles and responsibilities will be discussed while writing of the plan is ongoing.

Suggested Content of this Section:

The roles and responsibilities shall be defined by reference to the protocol document;

- Organisations involved
- Roles of the community group
- Roles of Ministry of Emergency Situations (MOES)
- Roles of the Regional MOES Centre
- Roles of the State Water Agency of MOES
- Roles of NGOs
- Roles of Regional Authorities
- Roles of other organisations involved
- Other details deemed relevant by the writer;

Flood Warning Stages and Action-Plan

Flood Warning System

Purpose of this Section:

This section introduces the different stages of flooding as per the flood warning system. It explains that there will be a graduated flood response effort based on the different flood levels expected. It will also give a brief overview of the main features of the flood warning system.

Suggested Content of this Section:

Give a brief description of the flood warning mechanism available to the community, its location who operates it and on what gauges/methods it is based. (a detailed description given in Appendix G (Flood Warning System));

Action Plan

Purpose of this Section:

NB: The flood action table will be one of the most important parts of the community flood emergency plan, in that it outlines the stages at which all actions are carried out, and by whom. It is to be issued to all site operatives along with the list of contacts

This section utilises the division of the response effort into different stages of flooding to describe the actions to be carried out by the community members and by all of the relevant responding agencies. All responders can see what duties are being carried out by community members and by other organisations with the result that all involved are clear as to how the overall response effort will

Suggested Content of this Section:

Required actions during and outside office hours

Insert the agreed trigger levels for each stage of the response into the far left hand column;


Describe the actions for each level and who will perform that action;

Other additional details deemed relevant by the writer;

To enable all responding agencies to read the Sample Action Table below, each organisations action have been highlighted in different colours as follows:

Local Community Community Group	
Regional Authority	
Regional MOES Centre	
State Water Agency	

Alert Levels are shaded as follows:

All Clear	
Flood Watch	
Flood Warning	
Flood Alert	

Flood Response Action Table

COMMUNITY NAME: <community name>		RIVER: <River Name>	
Warning Level	Predicted Impact	Action	Action by whom?
	All Clear	- No imminent flood risk	-
Flood Watch	48 hours in advance	<Community Group actions here>	CG
		<State Water Agency actions here>	SWA
		<Regional MOES centre actions here>	MOES
Flood Warning	24 hours in advance	<Community Group actions here>	CG
		<regional authorities actions here>	RA
		<Regional MOES centre actions here>	MOES
		<State Water Agency actions here>	SWA
		<any other organisations actions here>	xxxx
Flood Alert	0 hours in advance. The event has already started. Less than <lead time> hour(s) for the flood to reach the community	<Community Group actions here>	CG
		<regional authorities actions here>	RA
		<Regional MOES centre actions here>	MOES
		<State Water Agency actions here>	SWA
		<any other organisations actions here>	xxxx

INFORMATION MANAGEMENT AND THE MEDIA

Purpose of this Section:

This section will detail how the information on the flood emergency is to be disseminated to community members, the community group, operational units and media representatives. It will also outline what specific information is to be passed on, such as details of evacuation routes, when the flood is expected etc.

Suggested Content of this Section:

Describe the methods of communication – mobile phone, land line telephone, sirens, email, websites, news reports etc.

Define who will be the person responsible for contacting the media, and where he/she may be contacted. (a single point of contact will be used) ;

Describe the arrangements for briefing the media;

Describe the types of information to be disseminated by the specific sections of the media;

Give details of where the public may obtain the relevant information

Detail how door to door information may be disseminated

Other additional details deemed relevant by the writer.

Appendix A: List of Contacts

Purpose of this Section:

This section simply lists the contact details of all organisations involved. It also lists contact details for organisations not directly linked with the flood response phase, but have been identified as having a role in the provision of services.

Suggested Content of this Section:

The list of contacts should contain landline phone numbers, mobile numbers, addresses and e-mail addresses of those groups and agencies that may require to be called upon during a flood event:

Community Group and Community representatives

Rayon Representatives

The organisations involved in the flood response, and all members of staff;

The most relevant local media;

Neighbouring local communities;

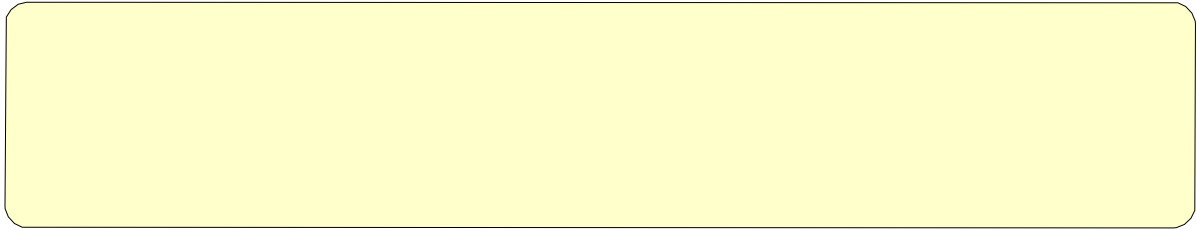
Other additional details deemed relevant by the writer;

This table should be issued in triplicate to operational staff in an easily carried A5 size format. The three copies are to be kept in their vehicle, their office, and at their home.

A list of contacts from all the agencies involved in the flood response will be as shown below.

	Organisation	Position within Organisation	Landline Phone no.	Mobile Phone no.	e-mail address
<Local Community>Community					
<Rayon Council> Rayon					
Regional MOES Centre					
State Water Agency					

Appendix B: Maps



Suggested Content of this Section:

Historical Flood Maps.

Predictive flood maps of the 1-year, 2-year, 5-year 100-year and 200-year flood envelopes (if available)

Maps of vulnerable properties.

Maps of diversion/evacuation routes.

Maps of buildings used during the flood response such as evacuation centres.

Other maps that the writer may find useful

Appendix C: Flood Equipment and Main Buildings

Purpose of this Section:

This section outlines the location and amount of equipment and machinery that will be available for the flood response. It is intended to give all the responding organisations a feel for the available resources that may be utilised even if they are not within their ownership. Information on the strategic buildings in the area shall also be provided.

Suggested Content of this Section:

Listing of available equipment by the community and by each responding organisation.

Listing of buildings to be made available for the flood response effort.

Location of operational centre

Evacuation and care centres

Appendix D: Evacuation & Vulnerability Registers

Purpose of this Section:

This section gives more specific details of the procedures for evacuation. It covers the process from the decision to evacuate up to caring for the evacuees at the evacuation centres. It also specifies the need for vulnerability registers of those, who will require special assistance.

Suggested Content of this Section:

Duties of the responding organisations for evacuation.
Vulnerability Registers
Transportation to evacuation centres.
Informing the community of evacuations
Other details deemed notable by the writer

<Local Community Name> FLOOD ALERT NOTICE

Date of notice:

Time of notice:

Please be informed that the properties in this area are expected to be under threat of flood within
- hours of the time of this notice:

Details of the flood situation and alert level will be distributed

Alternatively, Please contact the local authority phone service on (insert phone number here)

All occupants of these premises shall make the necessary arrangements to protect themselves and their property from possible flooding.

There is also a possibility that evacuation of the building may be required, and occupants should also prepare for this eventuality.

Appendix E: Incident Report Form & Flood Records.

Purpose of this Section:

This section explains the importance of recording flood information before during and after the event. This information can help in identifying high risk areas, and can also be used in river modelling/flood prediction. Notable incidents that occur should also be recorded.

Suggested Content of this Section:

Copy of a sample flood incident report form.
Information on how to record flood water levels.

Sample Flood Incident Report Form

FLOOD INCIDENT REPORT FORM	
Date:	Time:
Name & Address	
Flood Location (street name)	
Time flooding started	
Time flooding ended	
Highest level noted (give description)	
Other Information:	

Appendix F: Recovery & Clean-up Operations

Purpose of this Section:

Recovery is that phase of operations that focuses activities on returning to the pre-emergency status.

Suggested Content of this Section:

Organisation of the recovery and clean-up operations .
Details of Humanitarian Aid
Contained within each Response Actions will be provision for carrying out and standing down of the response effort

Appendix G: Flood Forecasting & Warning - System Details

Purpose of this Section:

This section will describe the trigger levels for the flood response, and the decisions regarding the standing down of the flood emergency. Describe what methods are to be used for flood forecasting in the local area and set out the floodwater depths at which particular actions will be required.

Suggested Content of this Section:

The official Flood Forecast System document shall be included (which details how flood warnings are decided upon).
Explanations of the different stages of flood warning to be used

Appendix H: Training and Testing of the Flood Plan

Purpose of this Section:

Training and exercises are important functions in the preparedness schedule. Through comprehensive individual and team training, all emergency operations personnel develop the necessary knowledge and skills to effectively prepare for crisis situations.

It is the responsibility of every Community and organisation head to ensure that his or her personnel receive adequate training.

Suggested Content of this Section:

Details of training schedule and timescale

Post flood debriefing – (lessons learned).

Implementing corrections to the plan.

Set dates for trial testing of the plan (e.g. desk exercise)

Details of how the plan is to be tested.

It is recommended that a full dry run of an incident response should form part of training of key personnel.

Maintaining a personal log of events

Appendix B

MIKHLIGOVA

MIKHLIGOVA FLOOD EMERGENCY PLAN

EXECUTIVE SUMMARY

This document contains information about the Community Flood Emergency plan implemented in Mikhligova.

The main aim of the plan is to protect life and property in this community. This plan has been created in order to ease the implementation of the Community-Based Early Warning System that has been designed within the framework of the 'Integrating Climate Change Risks into Water and Flood Management by Vulnerable Mountainous Communities in the Greater Caucasus Region' project.

This plan will be primarily based on information received by the flood forecasting operational system implemented within the State water Agency and linked to hydro-meteorological stations deployed in the vicinity of this community.

This document will set-up the responsibilities of all the different organisations to be included, such as:

- The community group of Mikhligova.
- The community members of Mikhligova
- The State Water Agency
- The Regional Ministry of Emergency Situations Centre
- The Gabala Rayon Authorities
- The Ministry of Emergency Situations

In this document three levels of warnings will be introduced, namely flood watch – be aware, flood watch – be prepared, flood alert – take action.

	Flood Sub Plan	Version No:	Issued on:	Prepared
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1. INTRODUCTION

The main purpose of this document is to detail the implementation of the Community Flood Emergency Plan (CFEP) in the community of Mikhligova.

This document should be used during the implementation of the CFEP and also during the operation and maintenance of this plan.

This document should be updated temporarily (at least every year) and also it should be reviewed and amended after every significant change in the community, including relevant flood events.

This document should be considered as guidelines to be used during the implementation and also as a consultation document by any organization involved in this plan and also by any resident (permanent or temporal) in Mikhligova.

This CFEP is the result of the work carried out by the State Water Agency of the Ministry of Emergency Situations (MOES), UNDP, the Regional MOES Centre and the community of Mikhligova.

Within this plan the following information can be found:

- Area of operation
- Flood risk and flood history
- Roles and responsibilities of the different organisations and groups
- A description of the flood warning system and the warning stages
- An action plan associated to these warning stages
- A communication plan
- Appendix with relevant information such as flood maps, list of contacts, evacuation equipment...

2. AREA OF OPERATION AND FLOOD HISTORY – RISK ASSESSMENT

2.1 Area of Operation

The area of operation of this CFEP is the community of Mikhligova. A map of the community area can be found in Figure 1.

Figure 1 – Map of Mikhligova

The main and more relevant buildings within this community are (<list of relevant buildings in Mikhligova, including the community house, schools... and locate them in the map in Figure 1>)

The Mikhligova community is within the Gabala Rayon.

The total area of the community is (<insert area of community>).

The population that will benefit from this CFEP is (<insert population of Mikhligova>).

The main rivers in the vicinity of Mikhligova are (<insert river names>). Of those rivers, the (<insert rivers that pose a risk>) pose a risk to the Mikhligova community.

Further maps can be found in Appendix B.

2.2 Flood History – Risk assessment

The community of Mikhligova has suffered flooding in the past. In the list below (Table 1) relevant flooding events in Mikhligova can be observed. This list should be updated regularly whenever a flood event do occur.

Year	Date	River	Main Houses Affected	Affected Infrastructure

Table 1 – List of significant flood events in Mikhligova

As it can be observed, Mikhligova is regularly affected by flood events, with significant flooding occurring approximately every <insert years> years.

The most commonly areas affected by flooding are:

<insert main areas affected by flooding>

Also, the following infrastructure has been previously affected by flooding:

<insert main infrastructure affected by flooding>

This information is corroborated by flood hazard maps from previous significant events and for different probabilities (shown in Appendix B). In this Appendix a list with all the relevant houses affected by flooding (or at risk) can be found.

3. ROLES AND RESPONSIBILITIES

There are several organisations to consider within the CFEP in Mikhligova, namely:

- The community group: the community group in Mikhligova has a very significant role and several responsibilities:
 - o The community group has the responsibility of being available at all times to receive flood early warning information.
 - o The community group has the responsibility of disseminating flood early warning information throughout the community.
 - o The community group has the responsibility of mobilising other community groups (fire, medical...) during flood emergencies.
 - o The community group has the responsibility of informing the Regional MOES centre and any other relevant organisation of any flood event when no warning has been receiving.
 - o The community group has the responsibility of undertaking a post-event analysis.
 - o The community group has the responsibility of raising awareness about the system implemented and about flood risk.
- State Water Agency of MOES: The State Water Agency of MOES main responsibility would be to provide timely warnings to relevant organisations, including (but not limited to) the community group of Mikhligova, the Regional MOES Centre and Regional Gabala Authorities.
- Regional MOES Centre:
 - o The Regional MOES Centre has the responsibility of supporting communities during flood emergencies.
 - o The Regional MOES Centre has the responsibility of coordinating the response measures, especially during significant event.
 - o The Regional MOES Centre has the responsibility of coordinating the response when several communities has been affected.

- Ministry of Emergency Situations (MOES).
 - o MOES has the responsibility of supporting the Regional MOES Centre when the event is very significant and/or the Regional MOES Centre cannot cope with the event.
- Regional Authority of Gabala: the main responsibility of the Regional Authority of Gabala would be to support the community of Mikhligova and to inform other communities in the vicinity.
- NGOs: to be defined.
- Other organisations involved: to be defined.

4. Flood Warning Stages and Action-Plan

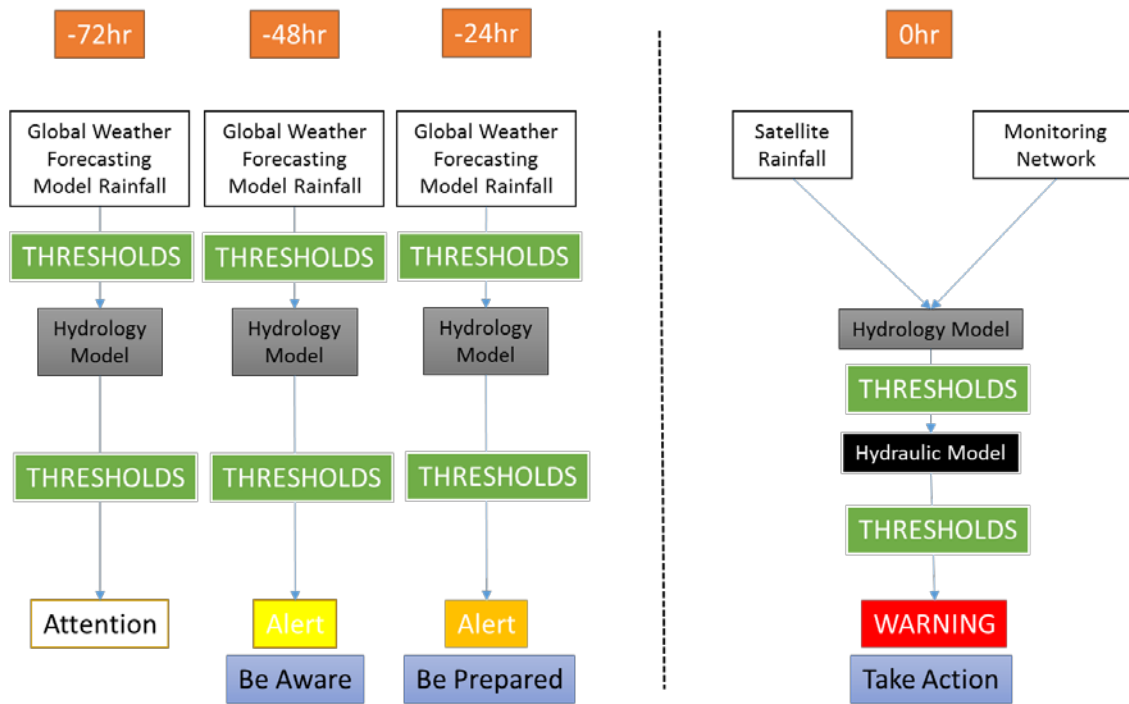
4.1 Flood Warning System

The Flood Forecasting Early Warning System (FFEWS) for the community of Mikhligova is based on the following:

- Meteorological Inputs: Several meteorological inputs are considered in the FFEWS.
 - o Automatic Stations: Information from weather and hydrological automatic stations and posts.
 - o Meteorological Forecasting: At this stage global forecasting models are being used, the Global Forecasting System by NOAA (National Oceanic and Atmospheric Administration of the USA) being the main forecasting input.
 - o Satellite Precipitation Estimates
- Hydrological Modelling: A hydrological model (HEC-HMS) has been implemented for the FFEWS.
- Hydraulic Modelling: A hydraulic model (HEC-RAS) has been implemented for the FFEWS.
- Forecasting Platform: A forecasting platform (Delft-Fews) has been deployed in order to collect all the data, analyse all the data and provide the necessary means for model launching.

There are several operational procedures within the FFEWS relevant to the implementation of this plan in the community of Mikhligova. In the first place, the system will be run every 12 hours, providing a 3 days forecast into the future and using 2 days of historical data (a total of 5 days simulation). As previously noted, the forecast will make use of different sources of precipitation data, automatic weather stations, satellite precipitation estimates and meteorological forecasting. This is critical in order to be able to provide sufficient lead time to the relevant communities.

There are different warnings associated with the different forecasting times:



Also, these different levels of warning should have associated different actions from communities and community members.

4.2 Action Plan

Three different warning levels are available:

- Flood Watch – Be Aware (48 hours in advance)
- Flood Alert – Be Prepared (24 hours in advance)
- Flood Warning – Take Action (1 hour (or less) in advance)

To enable all responding agencies to read the Sample Action Table below, each organisations action have been highlighted in different colours as follows:

Local Community	
Community Group	
Regional Authority	
Regional MOES Centre	
State Water Agency	

Alert Levels are shaded as follows:

All Clear	
Flood Watch	
Flood Warning	
Flood Alert	

Flood Response Action Table

COMMUNITY NAME: Mikhligova		RIVER: <River Name>	
Warning Level	Predicted Impact	Action	Action by whom?
Flood Watch	48 hours in advance	Flood Watch to Community Members	CG
		Flood Watch to Community and other Organisations	SWA
		Flood Watch Information Received. Preparation commence	MOES
Flood Warning	24 hours in advance	Flood Warning to community members. Be prepared. Review response equipment. Advice community members to: <ul style="list-style-type: none"> - Prepare a flood kit. - Know where to go - Pay attention to latest weather details 	CG
		Flood Warning Information received. Preparation commence	RA
		Flood Warning Information Received. Liaise with community group. Prepare response equipment.	MOES
		Flood Warning to Community and other Organisations	SWA
		<any other organisations actions here>	xxxx
Flood Alert	0 hours in advance. The event has already started. Less than <lead time> hour(s) for the flood to reach the community	Flood Alert Received. Take Action! The community group should coordinate with the response different groups and members in the community. Should advice community members to: <ul style="list-style-type: none"> - Protect yourself, your family and help others. - Move family, pets and valuables to a safe place. - Turn off gas, electricity and water supplies if safe to do so. 	CG
		Flood Alert received. Coordinate with community group if required. Advice other communities.	RA

	Flood Alert received. Take Action. Coordinate with community group. Assist Community Group in the response.	MOES
	Flood Alert to Community and Other Organisations. Keep community and Regional MOES Centre informed with the latest weather information.	SWA
	<any other organisations actions here>	xxxx

5. INFORMATION MANAGEMENT AND THE MEDIA

TO BE COMPLETED BY COMMUNITY.

This section should explain how the community group is planning to disseminate the flood warning information to the community members and to the media (if necessary).

The use of the siren (and location), the use of mobile phone – SMS and the use of any other communication mean should be explained briefly by the community.

It should be noted that this dissemination process is based on the community getting information from the State Water Agency about an impending flood event.

Appendix A: List of Contacts

TO BE COMPLETED BY COMMUNITY

A list of contacts from all the agencies involved in the flood response will be as shown below.

	Organisation	Position within Organisation	Landline Phone no.	Mobile Phone no.	e-mail address
<Local Community>Community					
<Rayon Council> Rayon					
Regional MOES Centre					
State Water Agency					

Appendix B: Maps

TO BE INCLUDED WHEN AVAILABLE

Appendix C: Flood Equipment and Main Buildings

TO BE COMPLETED BY COMMUNITY

Appendix D: Evacuation & Vulnerability Registers

TO BE COMPLETED BY COMMUNITY

<Local Community Name> FLOOD ALERT NOTICE

Date of notice:

Time of notice:

Please be informed that the properties in this area are expected to be under threat of flood within
_ hours of the time of this notice:

Details of the flood situation and alert level will be distributed

Alternatively, Please contact the local authority phone service on (insert phone number here)

All occupants of these premises shall make the necessary arrangements to protect themselves and

Appendix E: Incident Report Form & Flood Records.

Sample Flood Incident Report Form

	FLOOD INCIDENT REPORT FORM
Date:	Time:
Name & Address	
Flood Location (street name)	
Time flooding started	
Time flooding ended	
Highest level noted (give description)	
Other Information:	

Appendix F: Recovery & Clean-up Operations

TO BE COMPLETED BY COMMUNITY

Appendix G: Flood Forecasting & Warning - System Details

Appendix H: Training and Testing of the Flood Plan

TO BE COMPLETED BY COMMUNITY WHEN TESTING HAS BEEN UNDERTAKEN